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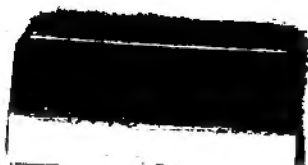
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Edited by

DR. JOHN NICOL

FREDERICK C. BEACH

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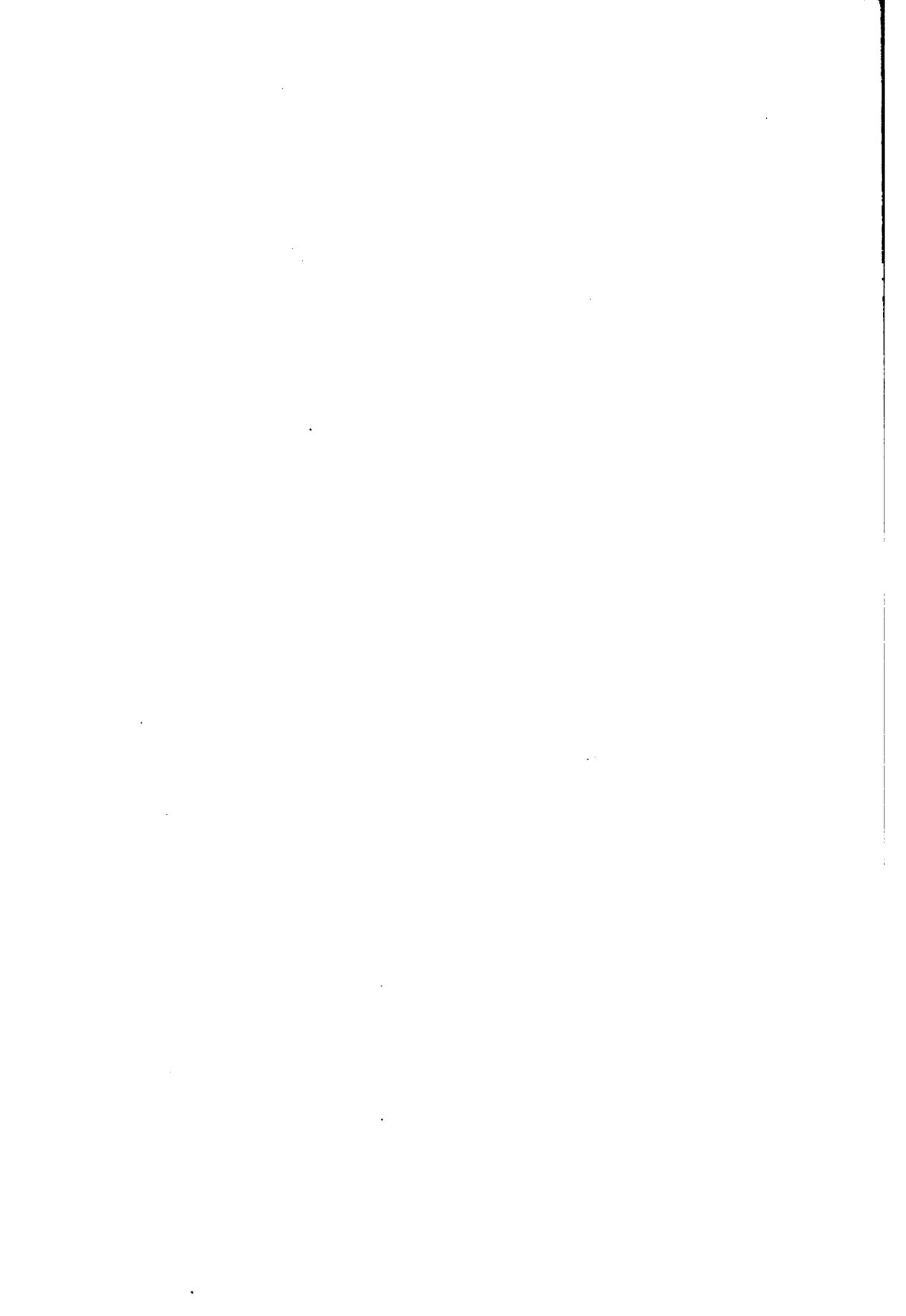
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PORTRAIT. UNIV. OF MICH

**MILTON WAIDE,
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THE
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NO. 1.

LOOKING AHEAD.

passing "another milestone in the stream of time," and having looked backward a little in our last, it is natural now to look a little at what may be before us. In addition to what may be called the routine matter of the magazine, keeping our readers abreast of the times in all that concerns photography, helping them out of their difficulties, and encouraging them when they do well or showing them their errors when they don't, we have always liked to have certain of the more crying sins or shortcomings as targets against which to launch our bolts in the hope that reiteration would ultimately have its effect.

One of the first of those was the use of a lens of too short focus for the plate employed, making the photographer select a too near point of sight, thereby giving a perspective that appeared false; exaggerating foreground objects and dwarfing those in the distance. For a time we met with decided success, but since the advent of the anastigmat with its greater covering power, and, of course, its greater cost, the tendency to return to a too short focus is again evident. There is, therefore, still work in that direction, but we hope to be able to induce the owners of anastigmats that are too short to employ, on their ordinary landscapes, one or other of the single lenses of the combination, reserving the doublet for their snapping, which, as a rule, is such that it

does not much matter how the perspective appears. But the result of a too near point of sight is now so well recognized that the falling away mentioned is likely to be but temporary, so that for a time at least we may "let up" on that subject for the present.

But there are still three mistakes so common as to be, on this side at least, almost universal, and so serious that until they are corrected there can be no perfect technique. They are *a*, the giving of too short exposures with the consequence of a too prolonged development, resulting in all the shadows being equally black and all the lights being equally white. *b*, The use of ordinary plates or films sensitive only to the blue and blue-violet, and consequent false rendering, instead of the more or less orthochromatic variety more or less sensitive to all the rays of the spectrum, and *c*, The employment of unbacked plates involving not only pronounced halation, but a general degradation of the image seen only by comparing the images on backed and unbacked plates, but once seen never to be forgotten.

Our targets, then, for this year of grace 1904 shall be this trinity of technique, attention to all three being essential to technical success; and, whatever may be said to the contrary, pictorial photography in which technique has been neglected is like salt that has lost its savor. We shall return to it again and again, in season and out of season, reproducing whatever may be said in its favor by others; and in a series of special articles, the first of which will be found on another page, under the caption of "The Trinity of Technique," deal with all three as exhaustively as possible. Those articles will doubtless contain much that has often been said before, but they will be none the worse for that, as photographers are conservative and the disease is chronic.

For the rest, we do not care to boast, hardly to promise, unless to say that as in the past so shall it be in the future, plus the improvement that experience brings, and we are never too old to learn. Nor does the improvement of the magazine rest altogether on ourselves, our readers could help us much. We do not expect all, or even many of them, to write articles, although if they would send us such as are suitable they should have our thanks, as well as payment; but there are few who could not give us notes of their experiences that would make interesting reading and add considerably to the usefulness of the magazine. And they could help us in another way by increasing our circulation. If all who during the last decade have told us of the benefit derived from our pages would make a point of each getting for us one additional subscriber, and, of course, the more the better, they would be working also for themselves, as in certain directions at least improvement and increased income go hand in hand.

PORTRAIT.
On Gas Light Paper.

UNIV. OF MICH.

MILTON WAIDE,
Fifth Avenue, N. Y.

THE TRINITY OF TECHNIQUE.—I.

Exposure

BY DR. JOHN NICOL.

CAN anything new be said about exposure? I think not; and yet, there is nothing connected with photography about which it is so necessary to rethresh the often well threshed subject. It may be taken for granted that 75 per cent. of all who photograph take to the camera for an amusement or a mere pastime as they take to base or football, and with no higher aim; and it is only natural that they should prefer a camera in the hand with which they can snap at whatever pleases the eye without thought or care, to a camera on the stand with all of both that it implies; and especially in the absence of the knowledge of how to direct either. Such heedless use of the hand camera; a useful instrument when kept within its limitations; while largely adding to the number of camera users has lowered the tone of photography in the eyes of the public and so blunted the preception of the photographers themselves as to make them satisfied with the merely white and black, the result of the under-exposure, and unable to see the difference between it and the print full of delicate detail and with all the degrees of gradation that were in the object or subject.

But there are always the chosen few, in this case I have supposed them to amount to 25 per cent., who aim at picture making, and who employ the camera on the stand for the ninety and nine subjects for which it is necessary; employing the hand camera only on the remaining one which is within its limitations; and it is for them the series of articles, of which this is the first, is written.

While it is true that some pictorial photographers are inclined to belittle photographic technique it is equally true that it is the basis of all good work, or at least the knowledge of how to produce it where it is wanted is so; and he who neglects it does so to the detriment of his work. The most important unit of the trinity of technique is undoubtedly exposure, I would say *correct* exposure, but that there is a degree of latitude greater than is generally supposed, within which, by modification of development, excellent work may be done, and hence the better way is to say that the foundation of all good work is *sufficient* exposure; sufficient, because while nothing can be made from an under exposed plate or film, almost anything may be done with exposures ten or even twenty times the normal or correct. It should be understood, however, that while good negatives may

be developed on an over-exposed plate better or more perfect negatives can come only from practically correct exposure; and while here I shall deal mainly with *sufficient* it should be the aim of the photographer to get as near to the *correct* as possible.

In nature there is very little white and no real black, as even a piece of black velvet at a short distance is merely grey, and there should be little of the one and none of the other in our prints, although from under-exposure there is too often much of both. It is frequently said as matter of surprise that notwithstanding the improvements in lenses and material the work of,

No. 1098.

Arthur Levine.
"THE PATH THROUGH THE SNOW." UNIV. OF MICH.

say, thirty years ago was better than that of to-day, and it is not far from the truth, so far at least as the technique is concerned; and, strange as it may seem, to those improvements is to be attributed the falling away. The landscape lenses of those days were generally single with a working aperture of f-16, and were more generally worked at f-22 or f-32, and the plates were slow enough to require minutes rather than seconds, so that when Wilson caught his "Breaking Wave" by an off and on exposure with his highland bonnet it was something to be talked about for years. With exposures of from five to five and twenty minutes there was little chance of

giving too little, and "expose for the shadows and let the lights take care of themselves" was the practice as well as the theory.

Modern lenses with large apertures and rapid plates have reduced minutes to seconds and fractions thereof, with a corresponding reduction of the latitude, brought "snapping" as an epidemic, and the latitude being largely on the over and hardly at all on the under side under-exposure and its consequences are everywhere visible.

The photographer should never forget that however sensitive or rapid a plate two things or rather actions must take place before a developable image can be produced, the overcoming of the inertia that precedes all motion; and whatever the latent image may be its production is certainly a result of the motion of energy; and the impressing of the image. The weaker the light the greater the time required for those two actions, and hence, unless time enough be given to impress the weakest detail in the shadows no amount of development will bring anything but fog or bare glass where shadow detail should be.

Then, not only does under-exposure give blacks where shadow detail should be, but it leads to the destruction of gradation in the lights. Nature shows many degrees between half-dark and highest light, but in an under-exposed negative they are all alike, all equally high; that is, in the negative all equally opaque. The action of the developer is cumulative, and if stopped at the proper time each light would have its own degree of translucency, but the action is continued in the hope of getting at least some trace of detail in the shadows, with the result that all become equally opaque, giving, as already said, a print in white and black.

From this it will be evident that the keynote of success in landscape photography is *sufficient* exposure, although correct exposure would be better, and that in any case it should always be on the side of over rather than under; over-exposure to any reasonable extent being easily taken care of by modification in development, while a much under-exposed plate is beyond redemption.

But how is correct exposure or an approximation thereunto to be ascertained? Mainly by experience, although some of the actinometric exposure meters are helpful; indeed, in the absence of experience, they may be made largely to take its place. There are those, of whom I have a claim to be one, who through that experience can *feel* as if by instinct just what an exposure should be under almost all kinds of circumstances; but to wait for that, which in my case has been the outcome of over half a century of almost constant experiment, is hardly to be recommended. An actinometric exposure meter combined with the use of a notebook and careful observation will do much for the beginner, provided he carefully notices

the first appearance of the image during development, and learns to recognize the difference between an over and an under-exposure. I have used both the Wynne's and the Watkins' meters with decided success, although the indications of both are generally about 20 per cent. shorter than I care to give; and with that added come very close to the time indicated by my own experience. In so-called time tables I have little faith. They are calculated for "the most rapid" plates, the rapidity of which is a variable quantity, and for the light given to the landscape during various altitudes of the sun, which is equally variable, while the meters recommended, the actinometric, give a fairly correct reading for both. A convincing experiment in this direction may easily be made by exposing a slip of printing out paper to reflected light till it has assumed a certain tint, carefully noting the number of seconds required. Repeat the experiment several times with, in each case, an interval of several days, taking care that the tints are identical, and unless under very exceptional circumstances, the differences in the times required to produce similar tints will show the uselessness of the tables which take it for granted that the light is uniformly in proportion to the altitude of the sun.

It has been urged as an objection to the use of the actinometric exposure meters the fact that plates vary in speed and that plate makers are constantly striving after increased rapidity, all of which is doubtless true; but the makers of the instruments profess to a periodical retesting and the issuing of corrected speed lists; and even if they did not, nothing is easier than for the photographer to do so for himself. The focal fraction by which the speed is indicated is the size of stop through which the plate would be properly exposed in the actinic time, the time taken to darken the test paper to the standard tint; and in the ordinary use of the meter the speed of the plate is made to tell what the exposure should be, while a reversal of the process will make the exposure tell the speed of the plate. Taking it for granted that the plate to be examined will be something between $f\text{-}56$ and $f\text{-}111$ of the Wynne's speed list, which will include most of the plates in ordinary use; the actinic time should first be noted, and, say, three exposures made on one plate, or, if more convenient, on three small ones; the first for one, the second for two, and the third for four seconds, and with an aperture of $f\text{-}32$. Development, which may be either all together or separately, will show which is most nearly correct, and all that is necessary to show the speed of the plate is to bring the stop employed in line with the time of exposure, when it will be found in line with the actinic time. Thus, suppose the actinic time to be 12, the time of the successful exposure two seconds; bringing $f\text{-}32$ in line with the two on the time scale brings in line with the 12, the actinic time, $f\text{-}78$, which is the speed of the plate.

CAMEO RELIEFS BY THE CAMERA.

THE title is rather misleading, as it is not cameo reliefs, but the appearance thereof that is the subject. Nor is there anything new in the actual method, that having been practised long, long ago for more purposes than one, but it was with it, as with many other methods, the simple modification that produces the curious transformation was not until recently hit on, and then it revealed itself to two independent experimenters at or about the same time.

One, in England, brought the matter before the London Camera Club; the other, in Ireland, took it to the magazines, with the result that at first neither was quite sure that there was not a plagiarist somewhere, but soon both became satisfied that they were independent discoverers.

Briefly stated, the effect of cameo relief is produced by printing through a negative and a positive printed from it placed film to film but *slightly out of register*, the printing being done in the camera. That is the Englishman's method, while the Irishman gets softer and at the same time excellent results by placing them glass to glass and printing in the printing frame.

But "cameo relief" does not by any means convey an idea of the almost unlimited variety of results obtainable by a few modifications of the method. With a negative and positive of equal density and in perfect register the superimposed plates would be practically opaque and give no print, but slightly *out of register* a head, say, would be indicated by a series of lines white or black, or rather dark or light, as might be desired, and the more the plates were out the broader, of course, the lines. Then, varying degrees of density, both of positive and negative, give each a different result, beginning with a mere line indication and going through to an apparently solid bust of any desired shade of density.

Nor need the experimenter be confined to glass plates, films probably offering greater latitude and giving greater variety. And the results must be seen to be believed. It would seem that specimens were on exhibition at the London Camera Club for some time before the night on which the method was explained and demonstrated, and while they called forth universal admiration and considerable discussion, including all sorts of guesses as to the method of their production, the nearest was wide off the mark.

The *modus operandi* is so simple and the outcome so interesting that we hope many of our readers will give it a trial, and if they do, and with anything like the success we expect, we shall try to induce our publishers to offer a prize for the best and most interesting examples.

CONCERNING ARTIFICIAL LIGHT DEVELOPING PAPERS.

BY MILTON WAIDE.

"IT is all in the making of the negative." This is often quoted by the writer in answer to the question put to him by men interested in photography, viz.: "Wherein lies the secret of your beautiful carbon and platinum effects obtained in your prints on artificial light developing paper?" It is all in the making of the negative. Greatly to be regretted is the fact that the demonstrators employed by the various makers of such papers are unable to produce, when attempting to demonstrate the superiority of their brand, the best that the product is capable of showing. The amateur, who in these days has the ability to know an ideal production for its real worth, can at a glance point out the defects and failures in the very samples which the makers present to influence their patronage. The prints are made from negatives selected from those usually found in the studio which approach the effect generally called "soft," most of them developed with pyro. You will observe that the prints, if full of detail, are grayish, with no brilliancy; if snappy and bright, they are marble-like in the whites and charcoal black in the shadows, with loss of many fine details in each.

When a negative is shown to me and I am asked, "Isn't that a fine negative?" I invariably reply, "Fine for what?" I care not how attractive the negative may appear, I want to see a print made from it upon the paper product you intend to use. I shall look through that negative with a good strong light back of it, then at the print made from it. If there is the minutest detail visible in the highest light or deepest shadow of that negative which is absent in the *dried print*, I call that negative far from ideal. It is not even attractive to me. The peculiar sort of negative I have found necessary for ideal results with artificial light developing papers, is one having a certain relationship of the whites and blacks, one to the other. In the few seconds required for printing, all the finer details of the higher lights must be registered and at the same time none of the detail in the deepest shadows must be blocked. I do not believe that it is possible to obtain such a result on these papers with a pyro developed negative.

It took three years of experiment to obtain the exact proportions of the formula now used by the writer, and the same developer is used for both plates and prints yielding perfect results in both.

I do not see why the hosts of photographers, amateur and professional, now working at haphazard do not set about endeavoring to perfect a system of regular work, taking as the basis of that system the exclusive use of artificial light developing paper.

Everything is in its favor, nothing against it. Time required, one-eighth; price of material, one-third; quality equals carbon or platinum, uniformity better by 50 per cent. If I can, you can.

CONTRIBUTION BOX.

Our readers can make this department one of interest and mutual benefit by sending in occasionally brief articles on their experiences. Short, plain statements of facts or ideas, however crudely written will be welcomed.

All those willing to help us in the way indicated in "Looking Ahead" should send their contribution, direct to Dr. John Nicol, Tioga Centre, N. Y.

Dark-Room Light.

AN accident is sometimes a good thing, at least so it was to me a few weeks ago. The ruby glass of my lantern under which I had groped in little else than the dark for years, got smashed and in our nearest town there was not another to be had. They had, however, a few pieces of orange of various shades, and selecting the darkest I thought I would give it a trial, especially as I had promised to develop some groups that I had taken and for the development of which I was preparing when the smash occurred. On lighting up under the orange glass the light was so brilliant that I was afraid even to try, as I had made only one exposure on each group and feared to spoil one and thereby lose the expected reward. Happening to have a few sheets of "post office paper" on hand that were oiled for a different purpose some time ago, I placed one in front of the orange plate, and, although the light was still, as I thought, far too brilliant, I gave it a trial. The result was all that could be desired, and although the light was such that I could easily read a newspaper, and the plates were III Wynne, there was not a trace of fog even after a rather prolonged development. Of course, I cover the tray unless during the momentary from time to time examination of the plate; and so long as that is done there is not the slightest chance of light fog with even the fastest plate; and so no more groping in the dark for me.

GEO. R. STEVENS.

To Make 5x8 Prints With a 5x4 Camera.

For this purpose it is better that the camera have a rising front, although if the lens covers well it can be done without. First make a negative of the landscape part reaching almost to the top, the camera being, of course, placed horizontally. Then, on a second plate, make an exposure on the sky, including about half an inch or so of the landscape. You have now two negatives, each 5x4, and it is easy to combine them in a print so as to make one nearly 8x5. For this purpose I employ an 8½x6½ old fashioned printing frame fitted with a thick plate of glass on which to place the negatives. A piece of paper the full size is placed on the landscape negative and the sky part, or what is to be that is masked in any one of the well known ways and the negative printed. The paper is then slipped up to the top of the frame, the sky negative placed under it and printed, masked as before, and that is all that there is to it. Of course there are the little dodges well known to those who are in the habit of printing in skies that I presume space would not be found for, they being so well known, but if wanted I shall be glad to give the method just as I do it in a future contribution.

K. RONALDSON.

Cleaning Bromide Prints

Many are troubled with stain markings or degraded whites in their bromide prints, and various are the methods recommended for their removal or brightening. I believe I have tried them all, and with varied success; but the following, given to me as a secret of the house by a discharged operator, is out of sight the best. Sixty grains each of iodine and potassium cyanide, and one hundred and twenty grains potassium iodide dissolved in ten ounces of water make a stock solution that will keep indefinitely, and of this a few drops are put in two ounces of water in a teacup or other suitable vessel, and the stains, or, if need be, the whole surface of the print, swabbed with a tuft of cotton moistened with it. It acts like a charm, removing every stain or objectionable darkness of the whites, making the prints as pure and beautiful as the finest velox.

ANDREW FULLERTON.

Prints on India-Tint Mounts.

I have the, according to some, bad taste to admire photographs on sunk-in mounts with india-tints, but till lately have never been able to overcome the difficulty of getting the print to stick as it should on the slightly greasy surface. Starch, gum, glue, and most of the commercial mountants have all been tried and found wanting; the corners turning up, and sometimes the whole print leaving the mount. But now the trouble is gone. Turning over the pages of an old, 1891 I think, volume of the *British Journal Almanac*, I came across just the thing I wanted, and I was not looking for it either. Here it is, or, rather, here is what it led me to do. Half fill a wide mouth pint bottle with water, add an ounce of carbonate of magnesia and shake till thoroughly mixed, not dissolved, as the author of the article says, because it is not soluble, and fill up with water. It will keep forever, and it is only necessary to pour a little into a teacup, moisten a tuft of cotton and rub it over the tint till the greasy surface is gone. On such a rubbed mount the print will stick as firmly as on any other surface.

MARTHA HARRISON.

MAKING OLD PLATES AS GOOD AS NEW.—At the Jubilee Congress of the Royal Photographic Society a paper by Leon Vidal was read on the "Utilization of Sensitized Plates That Had Become Fogged Through Age." Briefly, he recommended, after exposure in the camera, that they should be immersed for from three to five minutes in a one per cent. solution of potassium bichromate, well washed, and then placed in the developer. The only difference between fresh plates and plates old and so treated, he said, was that unless the bichromate was very thoroughly removed by washing, the action of the developer would be slow, and even then development would occupy a greater amount of time. From the discussion that followed it was evident that the success of the operation depended on the strength of the bichromate solution not exceeding the one per cent.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

SPIRITS of both kinds seem always ready to play sad tricks with poor humanity when it lays itself open to their influence; but the kind that come from the "vasty deep" beat John Barleycorn's production by a long chalk. The most striking of their tricks was told at a recent meeting of the Society of British Artists, and by Mme. d'Esperance, the lady who underwent the experience, and she ought to know. She is a "medium," one to whom the spirits come when she calls, but just where from is not told. She had gone into the cabinet in the dark as usual, summoning her "spirit guide," and, whether with or without her consent, is not said, was photographed by flashlight. When the negative was developed it was found that the heads had been changed, the head of the spirit being on the shoulders of Mme. d'Esperance, and her head on the shoulders of the spirit. Such negatives are easy, and there is money in them amongst the believers, who are more numerous than the unbelievers would believe.

* * *

They do *some things* better on the other side. The British agent for the Ansco Gaslight paper offers three prizes; not useless medals, but valuable articles of daily use, to wit, "A solid silver hall marked tea and coffee service, a lady or gent's 18-carat gold keyless lever watch, and a lady or gent's high grade cycle." Nor are the prizes to be awarded to work which may or may not be a proof of ability on the part of the exhibitor, or being that may be merely a fluke; but to what will show the ability of the prize taker as a judge of art, which is a very different and much better qualification. All that he or she who wants the tea service, the watch or the cycle, has to do is to purchase a packet of Ansco paper, with which they will get a coupon and a sheet of sixteen photo-illustrated Christmas cards. These are to be returned marked in what the competitor considers their respective order of artistic merit, and the prizes will be awarded to those who come nearest to the popular vote.

* * *

Have we here any idea of the extent of the picture postcard craze in other parts of the world? I think not, and I hope that of one phase of it we never will have any knowledge. From one London shopkeeper alone there was taken by the police authorities no less than 27,550 cards, many of them so "disgustingly immoral" as to lead the police court judge to condemn them to destruction. The shopkeeper, however, was said to be a respectable man, and as he did all that he could to help in the matter, he was allowed to return most of them to France, from whence they came, and let off with a promise to be more careful in his future selections.

* * *

Foreign post office officials are becoming alarmed at the number of picture postal cards they are called upon to handle. The craze has become so popular that the post offices at many resorts have been fairly swamped with

the cards. It is estimated that 192,000,000 picture postals were sold in Great Britain in the past year.

* * *

A writer in the *Das Atelier des Photographen* has a poor opinion of the professional photographer. Writing on questions of the day, he says that the greatest difficulty he (the professional) encounters is the judging of exposures, as, while the amateur successfully employs some of the various instruments, photometers, actinometers, or other measurers of actinism, he turns from them with disgust *because he can do nothing with them*. The italics are mine, but surely he is too hard on the poor professional, as to conservatism, rather than lack of ability, should be laid the charge. It is quite true, however, that a majority of the professionals do not give sufficient exposure, and are too apt to trust to the destructive work of the retoucher to cover their shortcomings.

* * *

Our "Western" friend enthuses over another "New" system of color photography invented by a John H. Powrie, aided by a Miss Warner, and by which they will by and by produce plates at the rate of 200 dozen a day that, used in an ordinary camera and in the ordinary way, will give pictures in all the colors of nature.

Mr. Powrie, it seems, built on a strong foundation, having taken up the work where the International Color Photography Company laid it down after spending \$100,000 on it, and with funds supplied by Miss Warner has brought, or *will soon bring*, it to a successful issue. I truly hope so, but on reading a little further it turns out to be nothing but the now old and well known Joly-McDonough method modified, and so described as to make sure that the notice has been copied from the lay press, and we all know how near the truth it generally gets when it touches on matters scientific. Color photography has so often been so near and yet so far that a good supply of salt is handy.

* * *

I am sorry to have again to question the dictum of Elizabeth Flint Wade in her "Round Robin Guild," and only do so to prevent mistaken information getting into the run of the text books. The rapidity of a lens, in the photographer's sense, depends solely on the size of the diaphragm or aperture in relation to its focal length, and the construction of the lens or the kind of glass has practically nothing to do with it. Again, the equivalent focus of a lens has nothing to do with the position of the stop, as she says, but is the length of a doublet that is equal to a single lens that will give an image of exactly the same size. The diaphragm slot is sometimes, perhaps generally not very far, from the optical center of the doublet, but never or hardly ever quite at it. Once more, bromide of ammonia does not give "great sensitiveness to gelatine and collodion emulsions," but, on the contrary, free bromide in an emulsion largely deprives it of sensitiveness. It *does* go against the grain to thus find fault with any colleague, and especially one whose work I have so long admired, and, as already said, do so only to prevent the spread of misleading information, knowing as I do how statements are thoughtlessly copied from paper to paper and even from book to book.

THE PIPER DEFINITION INDICATOR.

By S. STOCKTON HORNER.

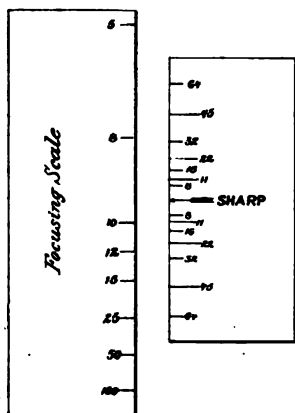
Knowing that Mr. S. Stockton Horner had invented and wrought out independently the very useful Definition Indicator and brought it before a meeting of the Photographic Society of Philadelphia, we asked him to favor us with such a description as would enable any of our readers to construct it for themselves, and the following will show that he has succeeded admirably. We cannot conceive of any addition to the camera that could be more useful; and although Mr. Piper was two or three years ahead of him with the invention, the independent inventor is entitled to equal credit.—EDITOR.

THIS device, first invented by Mr. C. Welborn Piper, and described by him in the *English Amateur Photographer* of September 24, 1897, is intended to take the place of the pointer heretofore used with a focusing scale. It may consist of a flat piece of celluloid, brass or other substance, upon which lines may be inscribed. It should be not less than $1\frac{1}{2}$ inches long and of such a width as is convenient. Across the middle of this should be inscribed a distinct line, SHARP. (See cut.) In use this line S takes the place of the pointer ordinarily used with a scale. On each side of the pointer line S should be inscribed a line (marked 8) .08 inch from line S. These two lines marked 8 enclose, then a space of .16 inch. This is the distance through which the plate (or lens) can be moved and have the same object appear sharp in the photograph when using stop, f-8.

When using stop, f-11, the plate (or lens) can be moved through .22 inch and still have the same object sharp. Therefore beyond the lines 8 and each .11 inch from the pointer line, SHARP are drawn two lines of equal length marked 11. For convenience in seeing they should be somewhat longer than lines 8.

Beyond the lines 11 and each .16 inch from SHARP (or S. for twenty) are drawn two lines marked 16. These are for use with stop f-16. Beyond the lines 16 come the lines 22, each .22 inch from S; then come the lines 32, each .32 inch from S; then the lines 45, each .45 inch from S; finally the lines 64, each .64 inch from S. Just as the other lines are for use with

the stops corresponding to their respective numbers, these last two lines are for use with stop f-64. They inclose a space of 1.28 inch. This represents the distance through which the plate (or the lens) can be moved and have one and the same object in sharp focus. For instance, if we focus on a distant light using the largest stop and getting the sharpest focus, then stop down to f-64, we may move the plate (or lens) .64 inch forward or .64 inch backward and have the light appear still in focus. In the foregoing spacing of the lines on the indicator a confusion disk of .01 inch is allowed for. This is diameter of disk usually considered allowable by opticians. If in practice it be found that coarser focusing is satisfactory, a



confusion disk of, say, .02 inch may be allowed for. In this case the lines may be inscribed just twice as far from S—i. e., lines 8 will be .16 inch from S; lines 45 will be .90 inch from S. If it be found that allowing a confusion disk of .01 inch gives too coarse focusing, then one of .005 inch may be allowed. In this case the lines will be just half as far from S. Thus line 8 for use with stop f-8 will be .04 inch from C; line 64 for use with stop f-64, .32 inch from S.

The lines drawn nearest S should be numbered with the f number of the largest stop in the lens. If f-6.8 is the full opening instead of drawing the first lines .08 inch from S, they should be drawn .068 inch (or about .07 inch) from S and numbered 6. If the stops are numbered with the U. S. numbers, then for the f system numbers on the indicator the corresponding U. S. numbers may be substituted: for 8, substitute 4; for 11, 8; for 22, 32; for 45, 64; for 64, 128.

However, the f system of stops should be used if possible, as it is based upon mathematical principles. Numbers need not be used at all if it can be remembered with which stop each pair of lines go.

This indicator will be found most useful with lenses (such as the modern anastigmat) having a flat field and giving equal definition all over the plate. If lenses not giving very fine definition or those of long focus are used a larger confusion disk is allowable. The lines may be further apart.

The above described indicator, independently worked out by the writer about two years ago, differs somewhat from Mr. Piper's as described in the *English Amateur Photographer*. In his a number of lines are engraved .08 inch apart. There is a center pointer line. While this will be found convenient enough when using stops of the f system which are 8 or multiples of 8, it is not so convenient when using stop f-11 or its multiples.* There is a commercial form on the English market. The writer does not know exactly how it is divided. *Since the angle at which rays of light from a point cross the axis of the lens is the same for the same stop, no matter what the focal length of the lens may be, one and the same indicator does for lenses of any focal length.* Of course each focal length of lens requires its own focusing scale.

This indicator will, no doubt, have its largest use on hand cameras. It may be used as follows: Fasten the indicator to the camera in the place of the ordinary pointer. Its outer edge should run closely along the inner edge of the focusing scales. The pointer line S should take the place of the ordinary pointer, lying in the same vertical plane.

Suppose we want to take a picture of a scene at the shore. In the distance is the sea and clouds; twenty-five feet away a troop of acrobats; ten feet away a youngster gazing in open-mouthed amazement. The problem is this: What is the largest stop we can use to get all sharp? Rack out the bellows until the indicator S points at 25 feet on the focusing scale. Then one line 8 on the indicator will come opposite say 20 feet and the other opposite say 50 feet on the scale. This shows that all objects between 20 feet and 50 feet away will be sharp should we make an exposure using stop f-8. Now in the supposed case, while the acrobats would be sharp, neither

*Since writing the above the Author has had a communication from Mr. Piper in which he says that he now recommends an indicator marked for all the stops, f-8, f-11, etc.

the distance nor the boy would be sharp. Glancing again at the indicator we notice that the two lines 11 are opposite say 18 feet and 100 feet on the scale. This shows that if we stop down to f-11, all objects between 100 feet and 18 feet will be in focus. In the supposed case, while the distance will be sharp, the boy is still out of focus. Now glance at the two lines marked 22. One will be opposite, say 12 feet, while the other will be off the scale. Rack out the bellows until the nearest 22 is opposite 100 feet; then the other 22 will be opposite 10 feet. This shows at a glance that with stop f-22 all objects ten feet and further away will be in focus should we take a picture. The problem is solved. Stop down to f-22. Let one 22 on the indicator come opposite 100 feet on the scale; the other 22 opposite 10 feet on the scale. Snap the shutter and you have, as you desire, the sea,

* * * the sea, and that is all. While you have been manipulating the stops the acrobats have done their tricks and moved away, and the urchin has gone crabbing. This may happen the first time, but soon it will take only a glance to show what stop is necessary and only a few seconds to stoop down and set the shutter. But the indicator may be used in another way. Suppose one sized stop, say f-16, must be used. How far is the nearest object that will be in focus when all beyond is in focus? Set the indicator so that one 16 is opposite 100 feet, then the nearest object in focus will be the number of feet away that is marked on the scale opposite the other 16 on the indicator. But suppose that is not near enough. Then if the picture is to be taken from the same standpoint and a stop of the same value used, it will be necessary to use a lens of shorter focal length. Indeed, one of the greatest uses of this indicator is to tell what is the most advantageous focal length of lens to use in any given case. In using a long focus camera the front lens may be unscrewed and the rear one used, of course with its appropriate focusing scale. The front lens, in order to save time, may be mounted with a bayonet clutch. In many cases it will be more convenient to have the indicator fastened to the bed of the camera while the scale or scales are mounted upon the moving extensions.

The professional will find this indicator of the greatest use, especially for saving time. Suppose he has a group to photograph. The following conditions are fixed. The group will be ten feet in depth. Owing to the light the smallest stop allowable is f-11. A fifteen inch lens is to be used. What is the largest size the figures can be in the finished picture to have all in focus? This problem may be worked out as follows:

Take a scale for a 15 inch lens and run the indicator along it. When the two figures 11 on the indicator include between them on the scale a distance of ten feet, notice to which number of feet the pointer SHARP points. This number of feet is the nearest distance the camera can be to the group to have all sharp when using the specified lens and stop. Now by using a table of conjugate foci, the length of the figures on the print may be learned. In the same way may be found the smallest plate that will take in the group. All this may be done without leaving your desk. The photographer can thus study the picture beforehand. Then with the aid of a finder, focusing scale and indicator, take the picture in the minimum of time with the great efficiency without using the focusing screen at all.

One of the most important uses of the finder is in the taking of very dark interiors. In such cases a direct vision finder should be used.

In taking photographs of objects full size, the numbers on the indicator should be regarded as doubled. Thus f-8 becomes f-16; f-64 becomes f-128. Since in photographing full size the distance between the object and the lens and that between the lens and plate are equal, the indicator tells us that objects photographed full size should lie between planes not more than 2.56 inches apart when using the stop marked f-64.

The above directions and explanations seem very complicated, but the indicator itself is not at all so and neither is its use. It does not cumber the camera and no use need be made of its special advantages, as, if desired, the main line SHARP may be used simply as is the ordinary pointer. But when full use is made of it an ordinary camera equipped with it is equal in many respects and superior in others to one built upon the reflector principle. Any focusing camera using films is incomplete without one. It can be adapted to any form of focusing lens, scale, or mount. For many purposes the ground glass is superseded (especially when a direct vision finder is used) as the focus can be most accurately divided without its use. [Note.—As some lenses change their focal length with a change of stops, when using them care should be used in changing stops.]

With a definition indicator, a set of focusing scales for the lenses of different focal lengths used, a table of conjugate foci, a view meter and an exposure meter; all of which can be put in one pocket practically any technical exposure problem can be worked out accurately and scientifically before the camera is set up.

SULPHURETTING THE SILVER IMAGE.

THE sulphuretting of the silver image and the production of a more or less satisfactory sepia color on bromide prints by immersion in a hot solution of hypo and alum has never been quite satisfactory, and therefore the method, the more indirect method it may be called, of immersion in a solution of sodium sulphide, recommended by R. E. Blake Smith in a recent number of *Photography*, has attracted considerable attention, and those who have tried it have met with very decided success.

He first converts the silver image into an iodide by immersion in the following solution:

Iodine	45 grains.
Potassium iodide	110 "
Water	to 10 ounces.

This, from the starchy nature of the paper, colors it more or less deeply blue, and the blue must be removed by immersion in a five per cent. solution of sodium sulphite. The prints are placed, without washing, into the sulphite solution and allowed to remain with constant movement till the blue is entirely gone, when they are at once, and also without washing, transferred to the sulphuretting solution. This is a weak solution of sodium sulphide, a salt that should be in pure white deliquescent crystals, but which is generally more or less brown from contamination with iron. It

is not generally, as yet, stocked by the stock houses, but of course will be when its value is better known, but can be got from those who deal in chemical reagents. How to get rid of the iron which interferes with the tone, and how to prepare it of the exact strength had better be told in the words of the author of the process. He says, speaking of the sodium sulphide:

This substance consists of large transparent deliquescent crystals, which are generally rather brownish in color. It is labelled and sold under the name "Sodium sulphide ($\text{Na}_2\text{S } 9\text{H}_2\text{O}$). Pure crystalline reagent for analysis." It cannot at the present time be obtained in stock at photographic dealers, but it can be ordered through them, or may be purchased directly from any dealers in pure chemicals, such as Merck's or Schering & Glatz.

While I certainly think this is a most excellent substance for sulphuretting purposes, I must at the same time protest against it being labelled "pure." It is nothing of the sort, but contains iron, whence the brownish color of the crystals. When these crystals are dissolved in water the iron goes into solution too. Until quite recently I had no idea that such a state of things was possible. I thought any iron present would on solution be immediately precipitated as ferrous sulphide. In the crystals the iron very likely exists as a double sulphide of sodium and iron in the ferric state. On solution, this double sulphide is probably first converted into a double ferrous sulphide, and then very slowly ferrous sulphide itself is precipitated.

I stated in *Photography*, December 6, 1902, that alkaline sulphides "affect to some extent the tint of the tinted or cream crayon papers," and "precipitate iron sulphide in the paper." The cause of both these occurrences I have traced entirely to the iron contained in the sodium sulphide I used. I also stated that "they are likely to cause blisters." This is quite true, but only if they are used in too concentrated a solution.

Having ascertained the causes of my previous want of complete success with sodium sulphide, I at once saw a way out of them by means of which sodium sulphide, with its great advantage of practical odorlessness, could be employed.

The following is the method I advise of making up the sulphuretting solution. Weigh out one and a half ounces of sodium sulphide crystals, dissolve these in about ten ounces of water and heat to boiling, stirring the solution gently with a glass rod. A glass beaker or a porcelain evaporating basin is a suitable vessel in which to heat the solution. Keep the solution just boiling for about five minutes, and then filter it. All the iron will be found to have been precipitated and left on the filter paper as black ferrous sulphide, and the solution will now be almost colorless. The solution is allowed to cool, made up to twelve and a half ounces with water, bottled and labelled. "Twelve per cent. sodium sulphide solution."

The sulphuretting bath is made by taking one ounce of the stock sodium sulphide solution and adding twenty ounces of water. Only a very short time is needed for complete sulphuration, but care must be taken to allow sufficient. I think it necessary to leave the print in the sulphuretting bath for at least a minute after all change in color has apparently ceased.

After the sodium sulphide bath the print is washed for about two hours in running water, and is then finished.

From the known permanence of silver sulphide the permanence of the so toned image is undoubted; and the salt once freed from iron and the stock solution made, the actual toning is as simple or perhaps more so than any other method of toning, while the getting rid of the almost prohibitive smell of the older method is a priceless gain.

The only drawback, if drawback it is, is the fact that there is little or no variety in the tone or color, but that applies equally to the older method, the color depending altogether on the depth or strength of the original silver image. Speaking of that, Mr. Smith says:

As I have before said, the tone finally obtained is solely a function of the original silver deposit. The most pleasing tone is got when we have a good vigorous image to deal with—one in which the deepest shadows are of black hue. Such an image can be well obtained by giving a correct exposure and developing with

Amidol	2 grains.
Potassium bromide	$\frac{1}{2}$ grain.
Sodium sulphite	20 grains.
Water	to 1 ounce.

The tone obtained in this case is a deep rich brown, and is equal fully to that obtained by the hypo-alum method when that method is working at its *very best*.

From a series of experiments that we have made we are prepared to homologate all that Mr. Smith has claimed for his indirect method of sulphide toning, and when the demand has induced the stock houses to supply a pure sodium sulphide and there shall be nothing to do but to add something like 120 grains to a pint of water and immerse the converted print therein, it will become universal whenever a sepia tone is desired.

Nor need we altogether confine ourselves to one shade of that color, as from our experiments we find that various proportions of Schlippe's salt (sodium thioantimonate) give various shades of color; but that we shall have more to say about in a future notice.

ACTINISM IN THE BLUE.—J. B. Dandeno of the Agricultural College, Michigan, in a paper in *Science*, a record of a series of experiments on "Phototropism," the stimulus of light on plants, and hitherto known as heliotropism, which he thinks should be abandoned in favor of the newer, and, in his opinion, more expressive name, makes a statement that should be of interest to photographers. Experimenting with the various wave-lengths of light with a view to ascertain their relative degree of action on plants, he found the puzzling fact that *blue was more active than white light*, the puzzle being in the other fact that all the other wave-lengths acted more or less in the same way and therefore it could not be that any one of them was negatively phototropic or had a retarding action.

Will some of our physicists who are also photographers look into the subject and unfold the mystery, or can it be that the especial sample of clear glass he employed had a greater absorption than the glass of the blue?

PHOTOMICROGRAPHY IN NATURAL COLORS.

BY F. MARTIN DUNCAN.

CONSIDERING the comparative simplicity of the process, it is somewhat surprising that photomicrographers have not more generally taken up and applied to their particular branch of photography the so-called "natural color process." Probably there is no branch of photography to which the three-color process can be applied with greater ease, success and certainty of obtaining charming and interesting results than to photomicrography; and yet, up to the present time, only a few workers have adopted it. This neglect, I believe, is due to a more or less prevalent idea that three-color work is both difficult and costly. As a matter of fact this is not the case, indeed, as I hope to make clear in the course of the present article, it is really in many respects easier to take photomicrographs in "natural colors" than ordinary "out-of-door" subjects, for the simple reason that in photomicrography we have a fixed source of light to depend upon. The process is certainly not a very expensive one, for the necessary addition to the photomicrographer's existing apparatus can be procured for less than a couple of guineas. The additions consist of a set of color screens; orthochromatic plates sensitive to blue-violet, red, yellow and green; some stains for staining the positives, and some prepared mica positive films.

As some of my readers may not be familiar with the general principles and practice of three-color work, a short outline of the process may be helpful. Photography in natural colors, as practised to-day, consists of taking three negatives of a given subject; making three positives from the negatives; staining, and finally superimposing the three positives in correct register. White light, such as a beam of sunlight, is composed really of three colors of the spectrum, viz., red, green, and blue; and it is the mingling or combination of these primary colors in varying proportions to each other which produces all the varying tints of nature. In producing a photograph in natural colors, the first exposure is made through a blue-violet screen, placed either directly in front of the lens as a lens cap, or between the lens and the plate, *i. e.*, directly behind the back of the lens mount. The second negative receives its exposure through a green screen, and the third through a red screen. Each exposure is, of course, made on an orthochromatic plate color-sensitized to a certain portion of the spectrum. The three negatives must each receive an approximately correct exposure in the ratio of one through the blue-violet screen, six through the green, and sixteen through the red screen. The three exposures must be made as rapidly one after the other as possible, so as to avoid any very appreciable changes in the lighting of the subject, between the first and last exposure. In photomicrography, however, where we have a fixed amount of illumination, the work can be carried out with less haste.

The exposures having been made, the three plates are placed in one dish and developed together, so that all three may receive the same amount of development. On no account must they be developed separately, or the even balance of gradation will be upset; this is at once realized when we

remember that the negatives represent color; thus, if our subject has a major proportion of yellow, the negative taken through the blue-violet screen will appear under-exposed. The plates having been developed, fixed, washed and dried, the next step in the process is to make a positive from each of the negatives. Three sheets of mica specially coated for transparencies are sensitized by immersion in a bichromate bath for five minutes. When dry, one corner should be cut off one of the mica sheets, two corners from another, and three from the third; so that each may with certainty be recognized. The mica with one corner cut off is used for obtaining a print from the negative taken through the blue-violet screen; that with two corners off for the print from the negative taken through the green screen, and that with three corners cut off for the negative exposed through the red screen.

The mica positives are printed by daylight, until the image is just visible on the back, and are then developed in hot water at a temperature of about 90 degrees to 105 degrees Fahrenheit, in just the same manner as a carbon print. When all the soluble gelatine has been washed away, the positives are placed in a clearing solution of hypo, formalin and potassium ferricyanide, after which they are washed and hung up by one corner to dry. The micas are then ready for staining. The print with one corner cut off is placed in the yellow dye; the print with two corners cut off is placed in a red dye; and that minus three corners in a blue dye. Staining will be completed in from fifteen minutes to an hour, the exact time taken to absorb the correct amount of stain depending on the temperature and the density of the positives. The superfluous stain having been washed off, the micas are allowed to dry, and are superimposed, masked, and placed between two ordinary cover glasses. Such is a short outline of the Lumière process of natural color photography, and which I have used with great success for microscopic work.

For taking a natural color photomicrograph, the microscope and camera are arranged in position as for taking an ordinary photomicrograph. If we are going to take a natural color photograph of a subject with which we are thoroughly familiar, and of which we have already obtained a successful ordinary photomicrograph, we shall be able to decide the correct exposure at once. Supposing that on referring to our notebook we find that the correct exposure for our subject, for an ordinary negative on a Lumière extra rapid plate, is fifteen seconds, the exposure through the blue-violet screen will be one minute, as the exposure through this screen must always be four times what it would be without the screen. As everything depends upon the correctness of the exposures of the three negatives, it is advisable, at any rate at first, to select a subject of which we know the approximately correct exposure. If this cannot be done, it will be best to make a trial exposure using a Lumière extra rapid plate; as by doing so we shall determine the correct exposure at once, and thereby probably save three plates, and be certain of obtaining at once the result we desire. Thus the little extra trouble of taking a test negative is more than compensated for.

Having settled the question of exposure, we proceed to take the three negatives, and as a practical working example I will suppose that we are

going to take a natural color photomicrograph of a transverse section of the ovary of a lily, which requires, with an ordinary paraffin lamp as illuminant, an exposure of fifteen seconds to obtain a good ordinary negative, and will therefore require one minute exposure through the blue-violet screen. Having carefully focused and obtained a critically sharp image, place the blue-violet screen directly at the back of the substage condenser so that it is in contact with the condenser mount. The light is then cut off with a card, the shutter of the dark slide carefully withdrawn and the one-minute exposure made. The green screen is then placed in position in the place of the blue-violet screen, and the exposure of six minutes made on the Ortho A. plate. The red screen is then substituted for the green, and the sixteen-minute exposure on the Ortho B. plate made.

There is no doubt that the less that orthochromatic plates are exposed even to the most subdued dark room light the better, and as the three negatives must be developed simultaneously for the same period of time, the best results will be obtained by adopting a method of time development, which makes it possible to keep the dish covered by a piece of board and all light excluded from the plates. Dianol will be found a very desirable developer for three-color work, as it gives good clear negatives with a large range of gradations, and the following formula is a very good one:

Dianol	15 grains.
Anhydrous soda sulphite.....	120 grains.
Water	9 oz.

This developer is poured on the three plates and the dish covered with a piece of board and rocked for one minute, at the expiration of that time the negative taken through the blue screen should be examined. If the exposure has been approximately correct, a fair amount of detail will be visible. The plate is then at once returned to the dish, and development continued for three minutes, when it will be completed, and the plates ready to be washed and fixed. After the final washing the plates are dried, and are then ready for printing from in the manner already described.—*The British Journal of Photography.*

NOTES.

THE KODOID PLATE AND A COLOR SCREEN.—When the kodoid plate first made its appearance it was said to be orthochromatic, and that a color screen was not necessary, but we are glad that the makers have thought better of the matter and have put on the market suitable screens increasing the exposures, the one five, the other ten times. They are mounted in black bronzed cell caps and made to fit most of the kodaks in general use. Users of kodoid plates or the new non-curling films, both of which are orthochromatic, should supply themselves with both and use them according to circumstances, and once intelligently used they will never or hardly ever again make an exposure without one or the other.

TRANSPARENCIES BY TRANSFERENCE.—F. A. Preston, in *Western Camera Notes*, says that transparencies may easily be made on metalotype paper by printing deeper than for ordinary prints, developing, fixing and

washing. Then, placing the print under water, the film is easily "worked off" and transferred to glass by slipping the plate under it. At first there may be a difficulty in getting the film to adhere to the glass, but when the water has been pressed out it will lie quite firm and perfectly smooth. For lantern slides the glass, of course, should be clear, but for window transparencies, it should be ground on one side.

A PLEA FOR THE USE OF ORTHOCHROMATIC PLATES.—T. K. Grant, in a paper before one of the London photographic societies on "What Part Does Color Play in Things That We See?" incidentally made the following plea for the use of orthochromatic plates: "To advance a step farther, compare a photograph on an ordinary plate and another on an orthochromatic plate, with a screen cutting down the blue and giving the other rays—yellow, green, red, etc.—time to act upon the plate. We find, in the latter, a softness, a greater range, more half tone and altogether a better idea of form." What he had to say was a plea for more thoroughness in their photography. The average photograph of to-day was wanting, it was false to nature, because it was only a record of light and shade and not of color, and being so it must be false in other things. In general, people were afraid of the words isochromatic and orthochromatic, and a good deal of the reason for this was to be attributed to a want of knowledge or the acquisition of false knowledge. An orthochromatic plate was as simple and easy to work as an ordinary plate, and it gave, moreover, a better result, for the reason that it gave more. He thought that photographers as a body had become so used to accepting the performance of the ordinary plate—the plate that utilized only the blue rays—as the correct record of what was before the camera, that they were very hard to move. But in ninety-nine cases out of a hundred the result was quite incorrect. They had been trained in a certain school for so long that the fact that orthochromatic plates superseded ordinary plates had not been fully grasped.

ENLARGING ON VELOX.—A correspondent writes: "I have lately tried the experiment of enlarging on Velox instead of bromide and am very much pleased with the results. I had never seen anything in any of the magazines on the subject and thought I would give it a trial. The exposure is from 40 to 50 times as long as on bromide, but the results are in every way as satisfactory and, in some respects, considerably better."

A UNIVERSAL DEVELOPER.—An amateur who turns his photography to account to an extent that would make some even fairly successful professionals envious, writes to say that he has thrown out of his dark room everything connected with development except edinol, acetone sulphite and dried sodium carbonate, excluding even bromide, and that until he did so he never knew the comfort and perfect certainty with which he tackles a batch of exposed plates. He says: "As you know, I never have an under-exposed plate, as knowing that I can do nothing with such, while I can do almost anything I like with one that has got enough, no matter how much more, I take care that they have plenty, always giving at least a quarter more than my Wynne's meter indicates, and sometimes a half. The following is now my standard formula, and, as it keeps well, I make up a large quantity, using it as it is when exposures are nearly correct, and

altering it to suit conditions or circumstances, although the only alterations ever made is the addition of water or of acetone sulphite, and I use it on plates for both negatives and positives, for lantern slides, and all kinds of developing papers.

Edinol	40 grains.
Acetone sulphite	200 "
Sodium carbonate (dried)	250 "
Water	10 ounces.

"This may be called a strong developer, and it certainly brings up the image rapidly, but without a trace of fog, giving a negative on a fairly correct exposure that is simply faultless. Sometimes I want detail rather than breadth, especially when there is much white drapery, and then I dilute to the extent of from a third to a half, and about the same strength for paper and slides, although in the latter it depends on the color I want and the exposure that has been given. For much over-exposure it is only necessary to add more acetone sulphite; in fact, the ringing of the changes of water and acetone sulphite enables me to do almost anything I like, and development under any kind of circumstances, that used to be undertaken with doubt, and sometimes fear as well, is now a pleasure and a certainty."

FIGURES, FACTS AND FORMULAE.—The compiler of this wonderfully popular book, who is also one of the editors of *The Photogram*, speaking of its popularity, says:

"Let us say, too, that we have no reason for attaching the slightest credence to a rumor that the editor of a contemporary commissions the office boy to reply to correspondents with the assistance of *Figures, Facts*. We do hear, however, from the proverbial "reliable quarter," that more than one photographic editor keep *Figures, Facts* on their office tables."

And we quite believe him, as we gladly confess that it lies, not quite on ours, but within reach of our hand, and that it has been consulted oftener than any book in our possession since it came to hand. The compiling of it was a "happy thought," and we have no doubt but that it will be the photographic book of the year. Who would think of thinking out a formula when he could find ready to his hand the best of its kind by simply turning over the leaf.

We find still another interesting paragraph on stripping, this time in *Photography*. Speaking of the well known stripping method where the film is first charged with an alkali and then with an acid, M. Drouillard suggests the following improvement: He says that by the ordinary method of first soaking the film in formaline it becomes so hard that the alkaline and acid solutions penetrate it with difficulty, and that many failures result in consequence. He therefore advises the use of a combined bath of one part of alkaline carbonate, three of 40 per cent. formaldehyde, and twenty of water; its tanning action is enhanced by the alkaline reaction, and two operations are superseded by one. After ten minutes' soaking, the surface of the film must be wiped and the plate dried. A sharp knife is then used to cut all round the film a slight distance from the edge, and when this is done the negative is put into a 5 per cent. solution of hydrochloric acid, when the film will probably float off unaided, but, if necessary, may be assisted by gently raising one corner.

PHOTOGRAPHIC LENS MAKING.

Synopsis of a lecture delivered before the Camera Club of New York on Tuesday evening, December 15th, by J. Ronald Taylor of the firm of Taylor, Taylor & Hobson, manufacturers of the Cooke lenses.

There is probably no other branch of organized manufacture which demands such precision of workmanship as is necessary for the production of the best photographic lenses. Artisans in some lines of manufacture are proud of working within an eighth of an inch; the machinist deals in thousandths and the watchmaker in ten-thousandths, but the photographic lens maker works in hundred-thousandths of an inch every day until he forgets the remarkable character of this performance, for it becomes instinctive. And while this accuracy is necessary for the production of the best lenses and any failure to realize it results in a defective instrument, it is likewise true that in the designing of lenses, also in the preparation of the materials, experimental investigation and mathematical reasoning are called for to an extent no less remarkable and rare in manufacturing industries.

(The lecturer then showed on the screen a number of views showing the factory and executive offices of Messrs. Taylor, Taylor & Hobson at Leicester, England. The various views showed that the premises, in sanitary and mechanical equipment, were modern and up-to-date in all appliances.)

Here photographic lenses in considerable variety are made, but the most important is the Cooke anastigmat. The glass of which these and other lenses are made is purchased in the form of rough plates from continental and English makers. It is an expensive material in the first instance, a piece four inches square costing sometimes as much as twelve dollars. This initial cost is due to the great care and skilled labor required at the glass factories to produce glass by melting and re-melting and slow cooling (the cooling process alone taking weeks in some cases), so that the mass will be homogenous, free from discoloration or foreign substance, free from striae, caused by too sudden cooling, and free as possible from air bubbles, although tiny air bubbles in a lens do not affect its defining power in

the slightest degree, but are rather a mark of the high quality of the glass.

When optical glass is received at Leicester, each piece of an entire batch is marked with a distinguishing number which serves to identify its optical properties, these having been carefully measured and recorded. The plates are then polished on both sides in the condition here shown and are examined for defects.

Examining Glass.

By the use of a special instrument, any particles of dirt and veins or bubbles, are made visible, and such defective portions of the plate are cut off and thrown away. The use of polarized light, familiar to microscopists, enables any internal strains such as have been described, to be detected, and material faulty in this respect is also discarded. By the time these processes have been carried out, the raw material, expensive in its first state, has become still more valuable, and is now ready for being made into lenses.

In speaking hereafter of the method of shaping lenses, the term "lens" will be applied to the simple lens or part composed of one piece of glass, several of which are combined to form the complete instrument.

The processes employed for shaping lenses always have a great fascination for visitors. Unlike wood or metal, glass is a material which cannot be cut

in the ordinary sense of the term "cutting." When a piece of wood is cut by a knife or chisel, a continuous shaving may be formed, because the material, being sufficiently elastic or plastic, bends without rupture to permit the passage of the advancing tool. But glass is so brittle that shavings of this sort cannot be made, and only two ways are available for shaping it. One is to heat it until it becomes plastic, when it may be pressed or cut into shape; and the other is to take a piece of glass of sufficient size and, without heating, to break or rub away its superfluous parts.

Cheap lenses are sometimes made by the former method, which is much the less expensive; but the process frequently results in those internal strains which have been mentioned, and in other defects which make it unsuitable for first-class lens making.

At Leicester, lenses are all shaped by taking pieces of selected glass of sufficient size and breaking or rubbing away their superfluous parts; and all the processes to be described for making lenses of glass, even to the final act of polishing, are essentially of this character.

If the lens to be made is a large one, an entire slab or disc of glass may be necessary for the purpose; but for ordinary lenses such as are used in hand cameras, one plate of glass may be sufficiently large for a number of lenses, and so thick that it has to be cut into slices. This is done by sawing it, the saw being a rotating metal disc with tiny diamond points fixed in its rim. The glass is presented to this saw, which slowly and steadily makes its way through the glass, dividing it into slices of sufficient thickness for the lenses being made.

Shaping Lenses.

From these pieces circular discs are made, and then begin the processes for shaping their surfaces to the spherical forms which give them their peculiar power as lenses.

To effect this a revolving spindle, as shown here, has attached to it a metal tool which is shaped to a spherical form either convex or concave, the counterpart of the curve it is desired to produce on the lens.

For the many curves which are ground, large numbers of these expensive tools are required, varying in size and curvature from that of the smallest marble to curves whose radius is measured in inches, feet and upwards, to infinity, which is, of course, a true plane. With these tools and various grades of emery, the surface of the glass is gradually changed from the coarsely ground condition, in which it was when first roughly shaped, into one free from scratches, and commencing to show signs of polish.

Measuring Lenses.

Meantime the axial thickness of the lens has been measured by means of a little instrument which indicates the thickness on a dial, and enables the workman to secure minute accuracy of measurement. At this stage of grinding the roughness of the glass, although apparent to the eye, is exceedingly small in absolute measure, being comparable with the length of a wave of light, and the succeeding process of polishing consists in rubbing down these very minute prominences to one general level by a further process of abrasion. For this purpose even the finest emery is not sufficiently fine, nor can metal tools be used, because a hard surface coming in close contact with the glass would scratch it.

The abrasives used for polishing glass are various earths and metallic oxides, such as tripoli, rouge and putty-powder (oxide of tin), and these are applied with water upon rubbers made of some soft substance. Where cheap lenses are made the rubbers are frequently elastic materials, such as paper or cloth, which act quickly but have the disadvantage of destroying the perfect spherical form of the lens by over-rubbing its outer margins and rounding them as the margins of coins are rounded by being carried in one's pocket. For polishing the best lenses, such elastic rubbers cannot be used, and at Leicester all lenses are polished with rubbers made of waxes or resins, which, although soft so that they will not scratch the glass, are inelastic, and cannot, if properly applied, distort the curvature of the lens. These wax polishers are held in supporting shells of metal.

The operation of polishing lenses demands exceptional skill, and although much ingenuity has been spent in designing machinery for the purpose, much of the work is best done by hand.

Hand Polishing Lenses.

In hand polishing, the glass is fastened with pitch to a suitable handle, and the polishing tool is rotated on a spindle. The rotating tool is lightly coated with the moistened abrasive, the lens is held against it so that its spherical surfaces are in contact, and the operator with a rapid and delicate motion of the hand, which can only be properly acquired by experience, rubs the surfaces together, changing continually the position of the lens and securing the equal polishing of the whole surface.

At intervals during the process the work and the tool are cleaned and fresh abrasive applied to continue the process

until it is complete. At each interval the lens is carefully examined, and as it approaches completion the accurate formation of its surface is tested by means of what is called a contact gauge. This gauge consists of a piece of very hard glass having on it a spherical surface very accurately ground and polished, an exact counterpart of the surface it is re-

Examining Contact.

quired to test. When the gauge and the lens to be tested are very carefully wiped, placed together and viewed by reflected light in the manner here shown, brilliant colors are seen, formed by "interference" at the two contact surfaces, colors which exactly resemble those seen in soap bubbles. These colors can only be produced when the two surfaces which form them are exceedingly close together. They have their maximum brilliance when the surfaces are a few millionths of an inch apart, and if the separation of the surfaces varies (as in a soap bubble it varies with the thickness of the film), the colors change and spectrum bands are formed. It is by noting the brilliance, the form and the separation of these bands of color that the lens maker is able to measure and to work with that degree of precision which is unsurpassed in any other branch of industry, but which is necessary for the perfect performance of the lenses themselves.

When the workman has finished his batch of lenses, they are inspected by the foreman and then passed to the lens testing room, where they are again examined individually by means of instruments presently to be described, and by assist-

ants whose sole business this is; and if passed as perfect they are received into stock, to await the arrival of their metal settings before being assembled and adjusted as complete lenses.

(The lecturer then illustrated the intricate machinery used in the making, polishing and engraving of the mounts and flanges and showed the patent thread which is a feature of Cooke lens mounts, greatly facilitating their convenient handling.)

After the lenses are set in their mounts they undergo another test. It would take too long to describe all the appliances which are used for testing the lenses optically. Accounts of some of these will be found in the journals of the Royal Photographic Society, and it will be sufficient here in conclusion, while describing some instruments briefly, to point out the general method of testing.

The action of a photographic lens in forming an image is simply to receive light from each point of the object, and to condense the light to corresponding points which form the image; and the capacity of a lens for producing fine definition depends simply on its power to condense, very accurately to a point, the light which it receives from any other point.

Accordingly, in testing lenses, instead of merely putting a lens in a camera, focussing an image, and attempting to judge whether the image is sharp or not, the lens is first put into an instrument like that shown in this illustration. At the end of the instrument furthest from the operator is a small flame or source

come from an infinite distance. In the path of these parallel rays and near the operator's left hand, the lens to be tested is supported, and the light which it thus receives is condensed to a point which he examines by the aid of a microscope. By examining this point of light, and moving the lens so that the light passes through it in various directions, he is able to tell a great deal more about its defining power than could be told merely by taking photographs with it.

A peculiarity of the Cooke lens, in which it differs from others, is its capacity for adjustment. The middle glass of the lens is held by screws which are used in the final assembling, to set the glass perfectly in agreement with the other two, and this work is done by the aid of the instrument just shown. By its means the lens is adjusted so that it produces sharp definition when turned in any direction whatever, and so that the image seen in the microscope remains stationary while the lens is rotated upon its axis. When this is attained it is certain that it will produce sharp definition at any part of its field, but it is not yet certain that the image is flat and free from distortion. Adjustment in these respects is possible in the Cooke lens by varying the separation of the glasses, without disturbing the axial adjustment already made.

Collimator

of light, bounded by a pinhole. The light passing through the pinhole spreads out in conical form until it reaches a condensing lens, called a collimator, which bends the light rays perfectly parallel so that they behave as if they had

Tramway Camera.

Appliances used for these adjustments of flatness of field and distortion are shown in this illustration. A number of test objects, fastened on the wall, are in a plane normal to the axis of the special camera. The camera runs on rails which guide it truly, and the focussing is done within the camera itself. Images of the test objects are magnified and examined in the focal plane, and by a special de-

vice in the camera, the charts are drawn to record the form of field and the astigmatic corrections of any lens tested.

The same camera contains a means for measuring distortion, a color test is applied by another attachment, and the prismatic support in the rear is an extension capable of accommodating the largest photographic lens ever made.

Testing Apparatus.

In this view is seen in use the instrument employed to measure the focal length of lenses, and on the wall at the far end of the room is seen a horizontal row of white spots which form the test objects of a special photographic testing

camera. The white looking spots are really papers printed with certain designs and figures.

This camera makes test photographs in the form of strips, a number of which can be taken on one plate for the purpose of easy comparison. Tests made in this way are used in determining the final adjustments of lenses; also to compare the working of different types of lenses.

Sir William Abney has said that the barrier to finer definition in photography lies not so much in the lens, which is now perhaps as perfect as anything can be, but in the coarseness of structure of the modern sensitive film. It is well known to opticians that this is the case; but they know equally that it is not alone the structure of films which limits the definition in ordinary photographs.

Where most photographers fail in getting the utmost possible duty from their lenses is in the imperfect setting of the film in the true plane of the image. And this failure is due not so much to want of care or of knowledge on their part, as to the loose, elastic and inaccurate construction of the average camera.

"So, finally, having endeavored to show something of the elaborate care which is used in making good lenses, let us leave with you one other thought: the need of corresponding care in using them aright."

OUR PORTFOLIO.

Communications for the editors, pictures for criticism (only one print at a time), and apparatus and material for examination, should be sent to Dr. John Nicol, Tioga Centre, N. Y.

1688. F. P. TOLLES.—"The Bend of the Road" is an excellent photograph so far as the photography is concerned, exposure and development could not have been better, and the subject is also good, but, from the employment of an unsuitable lens, a lens of too short focus, it has been made almost ridiculous. The perspective, of course, is correct from the point of view, but the shortness of the lens made you go so near that the road appears much broader than long, at the beginning of the foreground an inch and a half, and at the distance of five-eighths comes to a point. You cannot get a perspective that shall appear correct unless you employ a lens of sufficiently long focus, not shorter, we have always main-

tained, than once and a half the longest way of the plate.

graphed, mainly because of insufficient exposure. The path from the gate, the stubble and the stooks were never so white, nor were the fence and the gate post ever so dark, while the sky was never, as here, darker than the road below it. The too short exposure has led to a too prolonged development, with the result that everything that should have been only in half-tone is made high-light. Expose for the shadows and their detail will develop before the half lights become, in the negative, opaque, as they are here. With correct exposure this would have been a fine picture, especially if you had used a stop large enough to give some appearance of atmosphere.

1691. SIDNEY S. CONGER.—“Soft Summer” is a “marine” whose interest is confined to the sky, and which, like many

1689. BARBARA CHANNELL.—“Those Missing Teeth,” a young girl with full shoulder-knots and minus two front teeth, laughingly shows her mouth as if the loss was a joke instead of a misfortune, belongs to the freak rather than the serious phase of photography; but the aim is evident and its execution satisfactory. It is a good example of the difference between a mere likeness and a true portrait, as in addition to a likeness, of which we feel there cannot be a doubt, the merry twinkle in the eyes, the mouth itself, and every muscle of the face combine to reveal the inner as well as the outer girl. It possesses in a high degree one quality of all good pictures, the power to influence its beholder, and no one could look long at this without feeling the contagion of the smile or being able to resist it.

1690. W. A. MCKENZIE.—“The Cornfield” is a good subject not well photo-

more ambitious productions, is valued less for what it is than for the effect it exercises on the mind of the beholder. White clouds on a blue sky have, on an ordinary film with a color filter, been rendered in values sufficiently true to suggest the feeling implied in the title to an extent that makes the little picture worth returning to again and again, each time with more pleasure than before. The other in our next.

1692. T. C. KEYS.—The group of three is well enough photographed, but the arrangement is too mechanical, the heads making a too pronounced triangle and the staring into the camera is objectionable. They are doubtless very good likenesses, but for anything like action or life they might just as well have been dummies from the door of a dealer in ready made clothes. Don't be content with a mere likeness, but try to get life and expression, and especially action into your portraits.

1693. JAMES MOCK.—"Autumn Leaves" is one of the pictures that is discouraging, pictures that but for one fault that we have pointed out for years, and which is easily avoided, would be almost perfect, but with it is almost worthless.

The fault is under exposure, and in this it is distressing in proportion to the otherwise beauty and perfection of the picture. And it is beautiful in spite of the unnatural blackness of much that should have been only a little less than half-tone. The subject is fine, the point of view probably the best, and the figure is well placed and suitable, a nurse with baby carriage in a public park. Nor is the atmosphere, that rare and great charm in a landscape, wanting; for while a lens of longer focus would have enabled you to secure a better distance between the planes, there is beauty even in the all too short distance. But surely you must see how false the values are, how unnaturally black the trees that are in shade, and how unnaturally white where in direct light. This is more particularly seen in the sapling to the right of the large tree on the extreme right of the print, the side in direct light being as white as if drawn by Chinese white, while the side in shade is a deep black. Instead of the one-twentieth of a sec-

ond we should not have thought of giving less, to such a subject and under the circumstances, than one second. Such an exposure, with suitable development, would have given, *cæteris paribus*, an exquisitely beautiful picture.

1694. FRANK F. MORRIS.—"In the Yellowstone Park" is a well selected "bit" of that wonderful part of our country, a combination of rock, trees and running water, the latter shown at a bend with evidently a path going round it. The movement of the water is well suggested, and altogether the composition is pleasing; the only fault being an unnatural blackness of the foliage and the deeper shadows from a too short exposure. It is evidently a shutter exposure, and, better, very much better than 75 per cent. of all such that come to us; although we should have liked to see a little more of the path, just sufficient to turn round the corner of the running water.

1695. WARD R. HYDE.—"Duck Creek." We hardly know what to say of this. The definition is too poor for a record, and we cannot find anything sufficiently interesting to make it worth photographing as a picture. It may have looked beautiful in nature, but as photographed the source of beauty has not been caught. Sky and water are alike an unbroken dull grey, and the foliage an equally un-

broken greyish black, with nothing to relieve or contrast either; neither light or shade in the ordinary acceptation of the

terms, and with nothing to suggest more than is seen.

There is, however, something in the lower left corner that you may not have seen, and which gives to the print a peculiar interest. It is one of those freaks in which nature sometimes indulges, a face formed by a combination of the lights and darks of the water, and where it is partly in the shade of the foliage. Nor is there a difficulty in making it out or the least necessity for the exercise of the imagination except perhaps in the pipe he appears, to most at least, to be smoking. The face is so clear and the expression so perfect that there is no difficulty in reading the character, the revelation of the inner man, infinitely better than in ninety and nine of the portraits of the professional photographer. We should like to reproduce it, and shall do so if the engraver can retain the likeness and expression as clearly as it is here.

1696 H. B. GERMAN.—The unnamed print is a good subject well photographed but badly composed, that is taken from an unsuitable point of view, because a perfectly horizontal sky line is repeated by an equally horizontal line of stooks, and the arrangement is all the worse be-

cause of the really fine leading lines of the foreground leading only to those uninteresting stooks. Quite as fatal a fault is the placing of the tree in the very center of the composition, a place where nothing of importance should ever be; never, that is, unless there be some good reason for it, and that only an artist who knows what he wants and how to get it should ever venture on. The photography, as already said, is fine, and you should give more attention to the *art* of picture making than as is evident, you have not yet given.

1697. CHAS. R. MORRIS.—"The Old Homestead" is a good example of the record of fact phase of photography, a phase, as we have often said, of more practical value than the pictorial, but a phase in which technique is of first importance. And here it is excellent, exposure and development having been just as they should. We should, however, have given the home on a smaller scale, showing more of its surroundings as they, more often than the house itself, tell the story of the home life within. Not that there is in this a lack of suggestive matter; indeed, it is full of it, as the sunbonnet of the mother, suggestive of "choring" outside, the boy on her left being yet too young to take that part of home duties off her hand; the father in his shirt sleeves telling of the desire for comfort after the work of the day, and the boxes for the birds or pigeons within reach of the hand telling of the good understanding between the various inhabitants of the home. Altogether it is a really fine photograph of a fairly picturesque subject.

1698. ARTHUR LEVINE.—"The Path Through the Snow," your "first attempt at snow photography," is successful, so far as the technique is concerned, but has

the usual fault of having been photographed merely because of the snow, and but for that would not have been thought worth a plate. The snow, the trees in the middle distance, and the rarely secured atmosphere, are all well rendered, but for what purpose? No one object is of more importance than another, there is no suggestion of anything more than is seen; and although the winding path leads the eye well into the distance, there is nothing there to see. In short, it is an excellent photograph of a subject not worth photographing.

1699. W. J. MCGUFFAGE.—"A Hazy Day" is fairly well suggested, but we doubt whether the subject was worth the effort. It is practically the picture of the large tree on the left, as, probably from the use of a lens of too short focus, everything beyond and not hidden by the mist is dwarfed in appearance to nothingness. Small as some of them are, however, they are large enough to do harm, or rather their reflections in the water are. The repetition, for example, of the two small trees on the point of land jutting into the water in the center of the middle distance, as well as the reflections a little nearer, catch the eye and keep it there, although they are really of no value, but seriously detract from the value of the composition. In

photographing such a subject the disturbing of the water just before exposure so as to convert reflections into shadows is a great improvement.

SOCIETY NEWS.

Secretaries of Societies, members or others who read papers at the meetings and who desire a wider audience for their communications are requested to communicate with Dr. John Nicol, Tioga Centre, N. Y.

Athens Camera Club Exhibition.

The first photographic exhibition of this energetic club was a decided success, and when it is understood that it is only in its third year and in a town of only some 4,500 inhabitants, the energy of its executive will be better understood. It is true that Athens is almost connected with Sayre, with its population of 5,243, but the latter are largely railway employes, not likely to increase to any great extent the membership.

Under these circumstances, and confining themselves to the three counties, Bradford, Chemung and Tioga, the exhibition committee, consisting of Messrs. Irving K. Park, Ansel W. Newman, Lewis J. Fidler, Fenton E. Wheller and

Mrs. Irving K. Park, must have wrought hard and done well. In addition to the 124 prints passed by the jury of selection, consisting of Messrs. Harold D. Steverson, Leverage Teed and George F. Sheers, from those sent in from the three counties; the value of the exhibition was largely increased by loan collections obtained from Ralph E. Berger, Edward J. Daw, Charles E. Fairman, Herbert F. Smith, Mrs. C. S. Maurice and George Timmins, 31 in all, and including examples of the work of some of the best men and women of almost all periods, from the early days of H. P. Robinson to the most recent of the American school.

Honored by being requested to select fifteen of what I considered the best from an art point of view, to be hung as a separate class, I had an opportunity of

carefully examining the whole of those passed by the selecting jury, and must say that while the "record of fact" bulked largely, there were a considerable number that showed a laudable effort after something better, and gave promise of considerable pictorial ability; while not a few had reached a pictorial stage worthy of much congratulation.

The following, written at the request of the exhibition committee for the *Athens Gazette*, and which appeared on the eve of the opening of the exhibition, will perhaps give a better idea of the show than anything that we could write now:

what is understood by salons, the exhibits may be included under two classes: those that simply are "records of fact" and in which technique and detail are the characteristics; and a representation that is not so much a copy of nature as a representation of the scene or object as the artist or photographer sees it; and in which technique is only of secondary importance.

Both classes are well represented in the photographs to be shown at the Athens Camera Club exhibition, and although in my selection I was expected to include only such as had a claim to the pictorial, I have, with a view to empha-

Mrs. J. E. Angell, Waverly, N. Y.

"LEARNING THE TRADE."

Having been requested by the executive of the Athens Camera Club to select fifteen of what I consider the best, from a pictorial point of view, of the one hundred and twenty-four photographs passed by the selecting committee for hanging at the forthcoming exhibition, I have had an opportunity of forming an idea of what that exhibition is likely to be, and may say at once that it will include some very excellent work.

At all such exhibitions, that is, exhibitions of photographic societies and camera clubs in contradistinction to

size its importance, included several belonging to the purely record class. Of such is "In the Mill," No. 4, by Mr. Lewis J. Fidler, and "At the Mill Dam," No. 14, by Mr. Park, both perfect in their technique and for many purposes far superior because practically more useful than the pictorial representation. I wish, however, that the workman in "The Mill" had been minding his own business rather than standing to be photographed, as he *will* catch and keep the eye from what it came to see. While the pictorialist is disposed to belittle tech-

Fred. T. Loomis, Elmira, N. Y.

"NEARING HOME."

Harland T. Stagg, Elmira, N. Y.

"THE TRAMP CARPENTER "

given an added charm, while his "Clouds and Water," No. 10, is a delicate photograph of what may be called the old school, that certainly would have taken a high award at the earlier exhibitions. Although hardly getting beyond the record of fact, the cloudland gives it a charm that wins for it a place in a pictorial collection. His "Tell Me a Story, Grandpa," No. 5, suffers from a too well defined background coming into competition with the figures, and but for that would have been a charming little picture. "A Misty Morning," No. 3, and "After Sunset," No. 2, by W. H. Arnold, give promise of better things, being evidence of an artistic temperament and showing an effort after an individuality that is the basis of all good work. While smaller than most of the others, I return to them again and again, always finding some new suggestion or seeing some new beauty. Fred T. Loomis, in his "Nearing Home," No. 5, has an attractive little picture in a different style, a style more attractive to the general public, although belittled by the more advanced picture makers. It is, however, just another

Irving K. Park, Athens, Pa.

"MATERNAL INSTINCT."

nique and such perfect definition as inimical to true pictorial effect, the more perfect both the better the record, and there are a thousand reasons why photography as a record maker is of more value to the world than photography as a picture maker.

But, as a rule, camera clubs are more generally interested in the pictorial than the record, and while their execution more frequently than not falls short of their aim, it is the pictorial that I have now more especially to deal with. Of the fifteen pictures already mentioned my attention is first attracted to Mr. Park's "The Maternal Instinct," No. 11, because while it possesses in a high degree almost all the essentials of a picture, it has what is always effective, the beauty of simplicity. Only a little less interesting is his "Almost Home," No. 12, which although considerably more complicated has to a considerable extent that rare beauty in a landscape, atmosphere. Ansel W. Newman's "The Creek in Winter," No. 9, has that wintry sensation that almost makes one feel cold, but it lacks the necessary atmosphere that would have

Ruth Armstrong, Athens, Pa.

"A WILLING WORKER."

Lewis J. Fidler, Sayre, Pa.

"WHERE THE GOATS ARE TIED."

Will. H. Arnold, Elmira, N. Y.

"AFTER SUNSET."

Ansel W. Newman, Athens, Pa.
"CHILD STUDY"

proof of the fact that good artistic results may be reached by more ways than one. It is a fact, however, that while we return to the other style again and again, we seem to see all that is to be seen in this at the first examination. "A Willing Worker," No. 21, by Ruth Armstrong, is a successful effort with a difficult subject, a child sweeping the walk, and she has caught the very spirit of the little sweeper oozing from both eyes and mouth. The lighting is bold but successful, and the only fault is the placing of the figure too high, making it seem too tall. "The Susquehanna," No. 6, by Louise E. Murray, is valuable more from its promise than for its performance, as while technique is only second in pictorial work, something better than is shown here is required in a good picture. It is, no doubt, true, that the Susquehanna is sometimes seen as represented here, but it is not in the most effective lighting, and the picture would have been better if shown under greater contrast of light and shade. "The Tramp Carpenter," No. 15, by H. T. Stagg, is an effective study in lighting that the oftener I

return to it the better I like it. It is possible that suppression has been carried too far, and that some indication of the walls of the workshop and its contents might have been suggested, but I doubt whether that would have been an improvement.

But the good work is not by any means confined to the selected fifteen, my difficulty having been more what to exclude than what to admit; and although time will not permit of noticing all, I may mention a few that more particularly attract my attention.

As a mere record and consequently a fine photograph, it hardly is possible to imagine anything better than "Watkins Glen," No. 106, by P. M. Raup, although it has no claim to the pictorial; and the same may be said of "Pigs in Clover," No. 44, by Lewis J. Fittler, photography in both being carried to almost its highest degree of perfection. "Lone Point," No. 36, by L. L. Ennis, is a pretty bit of water and waves, one of the rarest things in modern marine work, so that it is refreshing to find

such a subject for once getting a sufficient exposure. Mrs. Geo. Page, in "What Is Home Without a Mother?" No. 86, has an amusing and satisfying picture and one that would have been a little better with a little more space over the head of the figure, and Mrs. E. E. Stancliff shows "Chemung Narrows," No. 122, that is very effective.

I. K. Park, Ansel W. Newman and some others whose names have already been mentioned, have contributed largely, many of the contributions perhaps better than those I have noticed, and I only regret that time will not permit a more lengthy notice.

In addition to direct photographs the exhibition includes a considerable number of enlargements, some of them of very high quality. One of the most effective is Mr. Park's "Forest and Stream," No. 95, which looks more like one of the old and highly valued engravings that are so sought after. Fine, too, is C. H. Kelmer's "Falling Spring," No. 50, and Mrs. J. E. Angell's "Learning the Trade," No. 16, three girls learning how to make bouquets or pack flow-

ers. Very interesting, too, are the contributions of the Maurice family, made all the more so by the thought of the emulation between the members. Emily's "Picking Violets," a baby trying to pick violets with mittens, while full of life and action, sends the thoughts to the many fruitless attempts to do things, equally hampered. Marian's "Geyser," No. 73, is thoroughly realistic; while her "In Yellowstone Park," No. 72, is a fine example of the "record" phase of the art. A. T.'s "Off the Georgia Coast," No. 68, shows beautifully the value of a bit of lovely cloudland.

These and others which time will not permit me to notice should show to the amateur photographer how much more effective, as a rule, enlargements are than direct small photographs, and should induce them to so master enlarging, preferably the making of enlarged negatives, as to find no difficulty in enlarging every negative that was worth it.

In addition to the photographs contributed by the amateurs of the three counties I understand that there will be on exhibition a loan collection including a number of pictures from the collection of Mr. George Timmins of Syracuse, one of the largest, if not the largest, in the world, including examples of work of some of the best known men and women of this and other countries, so that, taking it all in all, the exhibition of the Athens Camera Club will be considerably ahead of the exhibitions of such clubs generally, and worth coming a considerable distance to see.

Camera Club of New York.

The regular meeting of the club was held at the club rooms, 5 West Thirty-first street, on the evening of December 8, President Crosby presiding.

Routine business mostly occurred. The treasurer's monthly report showed a good balance in the treasury. The lantern slide committee reported upon the advisability of securing a suitable hand fed burner for the electric lantern and the notification of resident members by postal card when a set of Interchange slides is to be exhibited. The matter was referred to the board of trustees for future action.

The scientific research committee,

through Mr. Fred E. Ives, recommended that the club acquire certain pieces of apparatus that will be useful in encouraging members to do scientific research work. They advised the sum of \$120 to be expended for this purpose. The committee suggested the following instruments be obtained: One Vogel Röhrensensito meter, one Scheiner sensitometer, one Abney photometer, one spectroscope, one microscope, one polariscope, one Wallace color sensitometer, one Watkin's photometer, one print meter, one depth gauge micrometric, one pair callipers micrometric to 1-50 mm., one pair scales to 1-10 mg., one two foot rule divided to 1-50 mm.

The committee also recommended that a club bulletin be published, so that results of research could be made known and distributed among members.

The entertainment committee reported the club had been benefited to the extent of four hundred dollars as the result of Mr. D. L. Elmendorf's lecture on the Higher Alps a short time ago. Another benefit lecture is promised for the latter part of January.

The secretary reported for the board of trustees that they had officially declined the invitation to send a member as a judge to co-operate with others as a jury to pass upon the art merits of photographs submitted at the St. Louis Exposition next spring. Seven new active members have been elected to the club. The death of H. H. Sidman on November 4, a member and a well known architectural photographer, was announced.

Mr. Roy discussed some apparent inconsistencies between the by-laws and constitution relative to the house rules, but no action was taken.

It was recommended that the prize cup for lantern slide competitions be kept on exhibition in the rooms as an incentive and reminder to slide making members to commence work for a competition.

It was voted that the annual members print exhibition be held in April, 1904, after which the meeting adjourned.

On December 15 Mr. J. Ronald Taylor lectured before the club on lenses and their manufacture. We give a synopsis of his lecture on another page.

On December 19 the usual Saturday club social occurred, styled a Kaffee Klatch and Punch.

AMERICAN LANTERN SLIDE INTERCHANGE.

The annual meeting of the board of managers for testing slides for the season of 1904 occurred at 361 Broadway, this city, on the evenings of December 3 and 4. There were present on the first evening Mr. W. H. Cheney, Mr. Herbert F. Smith, Mr. John P. Zenner and Mr. F. C. Beach of the board, and Rev. Townsend of the Orange Camera Club upon invitation. Mr. Scott and Mr. W. P. Chambers operated the lantern (an electric hand fed lantern). The second evening included upon invitation Mr. H. R. Terhune of the Orange Camera Club and Mr. Henry S. Redfield of the Hartford (Conn.) Camera Club. At a meeting of the board held on this evening Mr. Henry S. Redfield was unanimously chosen as the fifth member of the board to succeed Mr. Wm. H. Rau of Philadelphia, who some time ago had resigned. The first evening a stenographer was employed, Mr. Felix Efray, to note down the criticism the board made on each slide.

There were submitted for examination 2,320 slides by twenty-eight different clubs and societies, of which 1,088 slides were accepted. Two new clubs were admitted, the Photographic Club of Baltimore City, Maryland, and the Vancouver B. C. Photographic Society. The Grand Junction Camera Club of Colorado was readmitted. A year or two ago this club was disqualified, not having a sufficient quota of good slides to admit. Among the older clubs who failed to qualify this season are the Camera Club of New York, the California Camera Club of San Francisco, the Brockton Camera Club, Montclair Camera Club, Detroit Camera Club, Troy Camera Club, and Montreal Camera Club.

The general percentage of accepted slides to those thrown out was about the same as in previous years. The Hartford, Buffalo, Orange and Chicago clubs showed the highest average of accepted slides to the whole number submitted. The board of managers had amended the rules slightly, providing that it was necessary for a club to have twenty-five slides of good quality approved out of a possible 50 to 125 submitted to admit the club.

The active clubs and societies in the Interchange for the season 1904 are as

follows: Photographic Society of Philadelphia, Newark Camera Club, Orange Camera Club, Bethlehem Photographic Society, Chicago Society of Amateur Photographers, Minneapolis Camera Club, Colorado Camera Club (Denver), Oregon Camera Club, Portland, Oregon; Buffalo Camera Club, Toronto Camera Club, Hamilton (Canada) Camera Club, Vancouver, B. C., Photographic Society, Frankford Camera Club, Syracuse Camera Club, New Britain Camera Club, Akron Camera Club, Portland (Maine) Camera Club, Reading Lantern Club, Capital Camera Club (Washington, D. C.), Grand Junction (Colorado) Camera Club, Photo-Section Pittsburg Academy of Science, Los Angeles Camera Club, Trenton (N. J.) Photographic Society, Washington (Tacoma) Camera Club, Columbia Photographic Society (Philadelphia, Pa.), Hartford (Conn.) Photographic Section of Scientific Society, Rochester (N. Y.) Camera Club, and Photographic Club of Baltimore City, Md.

The accepted slides are now in process of combination and listing into sets for exhibition, and it is probable there will be ten different sets, each having a hundred slides or over. Their titles will be, "Hartford, Philadelphia and Portland," set; "Hamilton, Toronto and Vancouver," set; "Frankford and Orange," set; "Los Angeles, Columbia and New Britain," set; "Reading and Buffalo," set; "Colorado and Newark," set; "Chicago and Minneapolis," set; "Baltimore, Syracuse and Tacoma," set; "Akron, Trenton, Grand Junction and Oregon," set; "Rochester, Bethlehem, Pittsburg and Washington," set. In all about ten sets of slides, covering a total of over 1,000 single slides.

The exhibition season usually extends over a period of ten months, a recess occurring in July and August, which leaves about one set a month for use by each club on the basis that three clubs can use one set of slides per month. The new season promises to be one of interest and profit to the several clubs in advancing the cause of photography. Clubs or societies desiring to participate in the Interchange should address F. C. Beach, general manager, 361 Broadway, N. Y., for information. Clubs by contributing a set of 50 slides of good quality may be admitted during the season.

OUR TABLE.

Books for reviews and apparatus and material for examination and report should be sent to Dr. John Nicol, Tioga Centre, N. Y.

ILLINOIS COLLEGE OF PHOTOGRAPHY.—From "With the Camera," the monthly notes from this college, we learn that the students, student like, mix fun with their more serious work, and that on "hallowe'en" they had "a right good time." The campus was illuminated by "Josh-lights" and everything draped in the gold, silver and lavender of the college. The programme included ghost stories, hypnotic and mesmeric performances, solemn music and marching through the grounds amongst the uncanny lights, the whole winding up with a marshmallow roast at a huge bonfire.

The photo-engraving plant mentioned in our last is already installed, and from the Effingham *Evening Democrat* of November 14 we learn that already the plant, under the management of Professor Mills, is turning out the blocks for the *Democrat's* book and job printing department, averaging from \$1,200 to \$1,500 per annum; an immense advantage for the students, learning from the making of blocks that must be good being very much better than from the making of them merely for teaching purposes.

The plant, we understand, includes two powerful arc lamps, a beveling machine, machines for bordering, routing, trimming, planing, etc., each driven by its own electric motor, so that the students, under the care of the experienced Professor, will be taught every step of the process from the making of the screen negative to the pulling of the perfect proof.

* * *

THE PHOTO-MINIATURE, No. 53, is devoted to "Pictorial Principles," a subject that to the pictorial photographer is 'always in order, and when as well treated and illustrated as is this, is, to those who will carefully study it, simply priceless. The author goes to bedrock principles, and in simple language, without studio jargon, tells, both by precept and example, how lines and light and shade should be combined to produce pictorial effect in a way that if our readers would study it carefully and put the teaching into practice, the pictures sent to "Our Portfolio" would soon be of a different stamp.

THE PHOTO-MINIATURE, No. 54.—We would fain dismiss this number with the simple mention of its subject, "Outdoor Exposures," but having so often done much more, so often expressed unexceptional approval of the way in which the subjects were treated, to overlook this might seem invidious. Therefore we say at once that we are disappointed and can hardly understand a treatment of outdoor exposures in which the actinometric, the only true method, is not once mentioned.

The author relies altogether on the "table" method of ascertaining the time required for a landscape, and after pointing out the shortcomings of previous tables, gives fourteen of his own, the outcome of much (we think) wasted labor. Tables show what the light should be under the best conditions, but every outdoor photographer knows that it is rarely two days alike, and if it were, how about the plates? The time is calculated for "the fastest plate," but who shall say just what that is, as while the fastest of some of the American makers does not exceed 90, some of the others are listed by Wynne at 128, which means that for a correct exposure occupying the time required to darken the test paper the lens should be stopped down to f-128, while the slower plate would require to be opened to f-90.

The author, of course, recognizes the limitations of the table method and the necessity for modifying its results, citing a number of conditions running all the way from A to N, the first requiring, say, 2-3 and the last 3. We do not, of course, say that a correct exposure cannot be ascertained by this method, provided the personal element be introduced with intelligence, and as a result of considerable experience, but we do say that "it is a far about road for nearness"; and that by one or other of the many actinometric methods, and with little or none of the personal element, the correct exposure can be found for any plate and under any conditions of light and weather.

Nor do we think it wise to attempt to continue the almost obsolete U. S. sys-

tem of stop marking. It never "caught on" even after its adoption by the Photographic Society of Great Britain, and when the largest stop in use was f-4 and the System called it No. 1, mainly because meaningless until committed to memory, and even then was liable to be forgotten; how much less should it be revived now when there are so many lenses with much larger apertures requiring, with that system, to be marked in fractions, and when the Society that adopted it has abolished it. So far as we know, there are none of the foreign makers who now so mark their lenses and only one American firm which, it is to be hoped, will soon return to the, in every way, more satisfactory focal fraction method.

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THE PHOTO-MINIATURE, No. 55.—Since writing the above its successor has come to hand, its subject being "Architectural Photography," and with it we are very much pleased. The author knows whereof he writes and has the knack of communicating his knowledge to others; while the illustrations, not always a feature of the magazine, are all intimately connected with the subject, and admirably serve the purpose for which they are intended.

As usual, there are one or two items that we must take exception to. Speaking of lenses, he says, "The severe requirements of modern architecture demand a combination of four lenses; the rapid rectilinear, wide-angle, telephoto, and extreme wide-angle." Then, speaking of the rectilinear, he says, "As its name implies, it should be rapid in action, possess a *flat field*, etc.; the italics are ours, and we so emphasize the statement because a flat field is just what the rectilinear does not possess, and therefore the rectilinear is not the best lens for architectural work, and the author seems to recognize this, as a little further on in the same paragraph he says, "The modern anastigmat is an example of the perfected rectilinear and eminently adapted for architectural work." No doubt, by "rectilinear" he means an anastigmat, but the name is so universally applied to the older and round field combination as to mislead the general reader.

Just one thing more: speaking of plates, he says, "For general work I have found the ordinary unorthochromatic plates good enough," and a little further on, "For higher class work and

where tone effects are desired the orthochromatic plates are advised." Surely tone is always desired, and equally so, why should one be satisfied with "good enough" when he can get and do better? But these are slight faults, if faults they be; and every one who aspires to architectural work should carefully study Photo-Miniature No. 55.

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JUBILEE NUMBER OF THE PHOTOGRAPHIC JOURNAL, the organ of the Royal Photographic Society. This number is of peculiar interest, not only because of containing the papers read at the Jubilee convention and the speeches at the Jubilee dinner, but also and especially because it contains the portraits of twenty-six men whose names, in photographic circles, are as household words, although few on this side have seen many of them in the flesh. A record of what they, unitedly, have done would form an interesting chapter in the history of photography, and, as we hope to write that some day, we, more perhaps for our own sake than that of our readers, make a record of them: Sir W. de W. Abney, Baron Arthur Von Hubl, P. W. Emerson, Sir William Huggins, Frank Haes, Henry Peach Robinson, Leon Warnerke, James Glashier, Maxwell Lyte, Dr. E. Abbe, Thomas R. Dallmeyer, Adolf Miethe, Dr. S. Czapski, Frederic Eugene Ives, Louis Ducos-Du Hauron, A. Davanne, Professor Gabriel Lippmann, Josef Maria Eder, Ferdinand Hurter, Edouard Valenta, Vero C. Driffield, Walter B. Woodbury, Joseph Wilson Swan, William Willis, Major-general J. Waterhouse, Lieut.-col. Joseph Gale.

To those who have "been there" from the beginning, and alas! they are growing fewer every day, there is not a name that does not suggest something done in photography, and some of them by their fathers before them, or whose doings and sayings would not form texts for photographic sermons; but of that more anon, and in the meantime we would only say that those who would care to see the portraits of such well-known men should send for a copy of the journal. The price is one shilling, with the necessary postage, and the address The Royal Photographic Society, 66 Russell Square, London, W. C.

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EXHIBITION OF THE PHOTOGRAPHIC SOCIETY OF PHILADELPHIA—While we write there is being held in the rooms

of this society one of the most interesting of the many exhibitions that it has organized. From the neatly got up catalogue we see that there are 146 exhibits by 49 exhibitors, including many of the members of the Photo-Secession, and the pictures are exclusively such as have been accepted for exhibition in one or more of the Salons in this and other countries. It is, in fact, an exhibition of salon pictures, and as in the catalogue each is followed by the salon or salons in which it had been shown, a unique opportunity is given of comparing the class of pictures favored by the various judges. As the exhibition will be open only from December 1 to 30, we regret that it will be closed before this reaches the eyes of our readers.

* * *

THE NINETEENTH CENTURY. A REVIEW OF PROGRESS.—*New York, G. P. Putnam's Sons.* This volume of 494 pages is reprinted from the *New York Evening Post*, and consists of a series of articles written by the best men, or rather each the best authority on his especial subject, the symposium being "A review of progress during the past one hundred years in the chief departments of human activity." We notice it here because it, of course, includes photography, but being ourselves invited to undertake that department we leave our readers to judge as to our success. The book, as a whole, is probably one of the most important of the year, the thirty-seven authors having each treated his or her subject so exhaustively as to make it almost encyclopedic. We may add that photography is placed under "Applied Science," probably its rightful place, its scientific phase being of more importance than its pictorial.

* * *

"ONE MAN METHOD OF PHOTOGRAPHY."—Milton Waide of 164 Fifth avenue, New York, sends a copy of his booklet telling all about his method of "one man photography," a method that he has found or rather made a very decided success both artistically and financially.

As far back as, we think, 1886, we published an article recommending a one man method, showing that only by such a method could photography be raised to a position equal to that of the artist of the palette and brush; a position in which his individuality could

get full play, and by which he could command prices commensurate with his ability. But it did not "catch on," and it has remained for Mr. Waide to put the method into practical operation. The booklet is sold for a dollar, a long price as measured by the literature of the day, but to the professional photographer, whether he adopts the method or not, it is or should be worth ten times as much. Nor is its interest confined to the professional, as it is hardly of less use to the amateur, the hints as to development and mounting, the result of a long and successful experience, being invaluable. To professional and amateur alike there are formulæ, hints and instructions regarding mounting, and suggestions, each worth many times more than the dollar charged for the booklet; and in addition, it, our copy at least, contains samples of the paper used for mounts and folders, and ribbon of all the various colors with which they are tied.

* * *

THE BAYER PHOTOGRAPHIC PRODUCTS.—We have frequently spoken favorably of the Bayer preparations, especially edinol, and the more recently introduced acetonsulphite, the latter of which may be said to be "in the air," so rapidly has it attained a wide popularity and for so many purposes.

We return to them again consequence of the receipt from the Bayer agents, the *Farbenfabriken* of Elberfeld Company of 40 Stone street, New York, for a second and very much enlarged edition of the booklet, telling all that need to be known of those products, and giving the opinions of several of our best known workers as to their qualities.

The booklet is not merely a price-list of the Bayer preparations, but contains in addition a lot of well selected formulæ with many valuable suggestions for its modification to meet almost all possible circumstances, and as to the employment of acetonsulphite with well known reducers other than edinol.

Our experience with the Bayer products warrants us in saying that the booklet should be sent for by every photographer, and that a postal to the above address will bring it.

* * *

RUBY VARNISH BAYER.—The *Farbenfabriken* of Elberfeld Co. have added another to the many obligations under which they have laid photographers by

the introduction of a ruby varnish that as soon as known will become indispensable. As a non-actinic light in the dark room, a stain for paper or cloth with which to surround a candle or lamp for temporary purposes, and as a backing for plates, it is superior to anything that we have ever come across. We have tried it for all these and many others, and are so pleased with it that we think it deserves an article to itself, and after still further trials we shall give it something like justice in our next.

* * *

DEVELOPING: ITS USE AND ABUSE, by Henry G. Abott. Chicago, Hazlitt & Walker, publishers. This is another little manual by a well known writer who does not write over the heads of his audience. The information it contains is set forth in the plainest terms and the various formulæ are given in ounces and grains as well as in the metric system. A useful feature of the booklet is a comparison of the relative exposure required for various grades and makes of plates. Tentative development is advocated and formula is given for all the best known reducers. Price, 25 cents, postpaid.

* * *

THE AMERICAN ANNUAL OF PHOTOGRAPHY, for 1904, published by the Anthony & Scovill Co., New York, has just come to hand. This, the only annual now published in this country, is fully equal to any of its predecessors. The editor, Mr. Spencer B. Hord, is to be congratulated on the number of articles by competent writers he has gathered together. The illustrations comprise many pictures by workers of international repute, and the frontispiece is a beautiful study by the Otto Sarony Co., made on Art Cyko. We hope to have the time and space for a more extended notice in our next.

* * *

THE CROWN TILTING TRIPOD TOP, manufactured by Folmer & Schwing, New York, is not so well known as it deserves.

By the aid of this attachment the camera may be tilted at any angle upward or downward, and permits of the camera being reversed instantly for vertical pictures without changing the camera back or removing the camera from the tripod. Its portability and compactness will at once commend it to the scientific worker, especially for work

out of doors, and its adjustments insure a rigid support, no matter in what position it may be used.

* * *

We have to thank our friend, L. F. Hammer, of the Hammer Dry Plate Co., for a New Year's card bearing a portrait of himself and the usual good wishes. In wishing "A Happy and Prosperous New Year" in return to Mr. Hammer and the company of which he is the head, we would incidentally hammer it into the minds of our readers that the plates made by this concern are uniformly good and may be relied upon under all conditions.

* * *

New Kodak Enlarging Camera.

"In designing the Kodak Enlarging Camera we have followed out our policy of producing apparatus by which the amateur may make good pictures with the least amount of trouble and uncertainty. The Kodak Enlarging Camera does away with the necessity of darkening a room and fitting up a window for the purpose of making a few enlargements from a small negative.

"The selected negative is placed in the front of the camera, a holder containing a sheet of Bromide paper is clamped in place, then pointing the camera towards the light of a window a short exposure is made. The holder is then carried into a dark room and the print developed and fixed. The whole operation requires but little more time than the making of a Dekko or Velox print, while the result in most cases is many times more satisfactory than a small print could give."

This very modest statement prefaces the manual of the No. 1 Kodak Enlarging Camera, a piece of apparatus which we predict will make the use of pocket Kodaks and other cameras of small dimensions more popular than ever.

During a recent visit to Kodak headquarters we were informed that a new enlarging apparatus for the amateur would soon be placed on the market. This was news of more than ordinary interest, we being well aware of the dearth of suitable apparatus for this purpose. The description of the outfit so impressed us that one was ordered for delivery at the earliest possible date. It stands before us now as we write, and it is a pleasure to state that in all respects it is far superior to anything we had expected at the very modest price—\$15.

What impressed us first was the compactness, the neatly covered case measuring only $3\frac{1}{2} \times 8\frac{3}{4} \times 10$ inches when closed. Extended it measures fully twenty inches, having sufficient bellows capacity with the lens of $4\frac{1}{2}$ in. focus to enlarge over twice the size of the original. A $3\frac{1}{4} \times 4\frac{1}{4}$ negative is thus

easily thrown up to cover a sheet of $6\frac{1}{2} \times 8\frac{1}{2}$ bromide paper, while any size negative may be used from the new 3A Kodak, $3\frac{1}{4} \times 5\frac{1}{2}$, downwards. A menis-

front board substituted carrying any lens that the user may have, or the Eastman Kodak Company will furnish with the outfit for \$7.50 additional a special portrait lens of $8\frac{1}{2}$ in. focus with iris diaphragm. Used as a camera the outfit is no more bulky than the ordinary view camera, and as it has a bellows draw of 16 inches and is quite rigid, it is highly suitable for large heads or bust portraits or for pictorial landscape work.

KODAK ENLARGING APPARATUS.

cus lens of good covering power is supplied and a shutter and diaphragms are conveniently arranged. A scale of negative sizes and enlargement is attached to the sliding board which permits of accurate focusing and adjustment of the size of the image without the aid of a focusing cloth. With the full opening of the lens, however, focusing is easily done on the ground glass. The holder for the sensitive paper is an adaptation of the book form of holder in which the paper is easily inserted in the dark room and held perfectly flat, the quality of the enlargements being equal to direct contact prints.

Besides being the most convenient enlarging apparatus ever offered to the amateur, the Kodak Enlarger can be transformed in a few minutes into a serviceable $6\frac{1}{2} \times 8\frac{1}{2}$ portrait or view camera. The auxiliary bellows and front board is removed and another

KODAK ENLARGER USED AS A CAMERA.

The Kodak Enlarging Camera booklet, sent on request, gives most explicit directions, besides containing detailed instructions for the exposing and developing of enlargements. While the manual is well worth having for the general information it contains, we venture to say that those of our readers who procure it will not be happy until they possess a No. 1 Kodak Enlarger.

ANSWERS TO CORRESPONDENTS.

Defective Negative.

W. H. BLACAR.—It is not easy, without seeing the negative, to say what is the cause of the shaded dark mark across the print, but it cannot be, as your friend suggests, a leak in the camera, as that would result in a light instead of a dark on the print. Neither do we think it can

be in any way connected with the shutter, although that you can easily prove by setting it wide open and exposing with the cap. It is more likely caused by some obstruction between the lens and the plate cutting off some of the rays and so producing the finely shaded vertical dark. An examination of the inside

of the camera should show the cause, although the mark is too feeble to appear on the ground glass. You may take it for granted that it is not outside the lens.

Stand Development.

C. ROLOFF.—Almost any of the ordinary formulæ will answer for tank development if sufficiently diluted, and the degree of dilution will depend on the length of time you wish to let development occupy. The following, with fairly correct exposures, may occupy from five to eight hours:

Edinol, ortol, or metol.....	30 grains.
Sodium sulphite	240 "
Sodium carbonate	150 "
Potassium bromide	5 "
Water	40 or 50 ounces.

Less water will shorten and more increase the time.

Lantern Slide Making.

(MRS.) L. H. SIMPSON.—Yes, the making of lantern slides is pre-eminently "work suitable for a lady," and work that her deft fingers can do perhaps better than those of most men; but to "tell you all about how to set about it and the best plates and developer would occupy a whole number instead of the short part of a column devoted to any one reply." One of the best instruction books that we know is "Lantern Slides and Slide Making," by Osborne I. Yellott, which may be obtained from your dealer or our publishers. One piece of advice we would fain give you, however, don't be satisfied with such slides as are generally sent out by professional slide makers, slides that, although they please the general public and indeed sometimes "bring down the house," are merely white and black without detail, or anything between clear glass and the highest of high lights, and that make a sunny summer landscape appear as if covered with snow. See first that the negatives are full of delicate detail and then that the slides are faithful reprints of the negatives with every degree of detail from the faintest shadow to the highest light, and that there is as little of either white or black as there are in nature, which is none, or almost none. A slide with more than a trace of clear glass or more than a trace of opacity is fit only for the waste box or to be cleaned off for a cover.

Choice of Shutter.

MAXIMILIAN JAHLEEA.—It is contrary to rule to recommend any particular

make of shutter or lens, nor can we say what kind of shutter would best answer your purpose without knowing what that purpose is. Where very rapid exposures, such as in athletics, the focal plane is undoubtedly the best. It is, as you doubtless know, of the roller blind description, placed immediately before the plate.

A shutter of the same pattern, but, of course, very much smaller, and placed either before or behind the lens, is in very general use in Britain, and when in front of the lens has the advantage of being used on various lenses; but for all ordinary purposes a between the lens shutter, such as the volute, is probably more convenient, and, in this country, in almost universal use.

JAMES McCORMIC, JR.—Any yellowish varnish will answer for coating the back of the plate to be scraped away in parts for the purpose of altering the values of the image in the negative. One ounce of gum sandarac dissolved in eight ounces of alcohol and colored to the shade required with turmeric or picric acid will answer the purpose, but should be applied to the plate gently warmed; that is, the plate should be warmed. Pour a pool of the varnish in the center of the plate and let it flow from corner to corner, pouring off at the last, and holding over a lamp or otherwise heating it till quite dry. If you do not care for the trouble of heating the plate you may substitute benzole for the alcohol and apply cold.

Automatic Washer.

ALEX. WHITE.—We hardly understand your description of the "Hydraulic Rocking Washer" and so cannot say whether it can be patented. We may say, however, that such rocking washers have been in use for at least forty years. Yours may be an improvement on anything that has been as yet introduced, and if you care to send us a drawing showing how it is operated we shall tell you what you want to know.

Insufficient Fixing.

ELIZABETH T. TURNER.—The negative came broken into dozens of pieces, but some of them were large enough to show that the yellow stain that appeared so mysteriously arose from insufficient fixing. It is not enough, in spite what your dealer told you, to leave the negative in the fixing solution till the creamy white disappears, but it must be left at least half as long again and twice as long would make assurance doubly sure.

"YOUTH." UNIV. OF MICH.

Geo. Donehower.

THE
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NO. 2.

THE ADVANTAGE OF HAVING AN OBJECT IN VIEW.

It is safe to say that nine-tenths of all who carry cameras carry them as they do a bag of golf clubs, with no higher aim than amusement, recreation or a mere change of occupation. When by some rare combination of favorable conditions, on development either by himself or by some one who "does the rest," a photograph of fairly good technique is obtained, the maker proudly shows it as a triumph of his prowess and is encouraged to go on snapping at whatever takes his fancy, until a succession of unmistakable failures convinces him that "photography is no good," and he disposes of his camera for less than a tithe of its cost.

It was wont to be said of photography that "he who once put his hand to the plough never turned back," but that was before the days of heedless snapping, and we believe that it only needs an object in view with the necessary care to carry it out to bring that state of matters back again. And for one object at least this article is timely

A. E. Mooney.

* GUESS WHAT I'VE GOT? *

—a record of the progress of vegetation in general, or of the progress of individual plants, trees, flowers or vegetables. Take, for example, a well shaped apple tree or a single branch thereof, or, better still, both, beginning

just as the buds begin to swell and photographing them at intervals of, say, a week; making a set of prints each dated and different from its neighbors, would be a work of continuous delight, and result in a little album of never ending interest. Some years ago we treated a grove or rather a series of arches of lilac in that way, only photographing them every third day, and friends in Scotland to whom the album was sent were simply amazed at the rapidity with which that plant responds to the vivifying influence of our spring.

Hardly less interesting are some of the denizens of the kitchen garden, while the progress of some of them is even more rapid. Some years ago we sowed side by side in our garden in Scotland seeds ripened in that country and some just brought from America. They included lettuce, radish, spinach, etc., and in almost every case the plants from American seed were ready for use by the time those from the Scotch seed were only a little above ground. But their extra vitality was not permanent. Seed from them the first year had lost at least a half of its original speed, and by the third year it had got as sluggish as its neighbor. Field and forest also afford ample opportunity for such records, the one telling the story of the crops and the operations incident to their cultivation and ingathering, the other showing the cycle of changes from the beautiful curves of the bare branches, the bursting of the buds, the mantle of green, the ripening of the seed, and the falling of the leaves making a carpet more beautiful than it ever entered into the Eastern heart to conceive.

We have long advocated specializing, as he who turns his camera on everything is not likely to excell in anything, and if good work is to be done, a specialty is a *sine qua non*; but the record that we here advise differs from a specialty in so far that the latter may be taken when inclination or the spirit moves, while the former must be attended to "whether or no." The specialist has to wait on conditions, while the conditions wait on the recorder. The recorder, in fact, works under "the pressure of necessity," the only condition under which routine work can be well done; and record is routine, the only qualification for it being the ability to produce perfect technique. In record work the artistic temperament and many other qualifications go for nothing, a "record of fact," pure and simple, being the highest aim; and success so easily obtained brings such interest in the work that the worker never has a camera to sell unless to help him to buy another more suitable. And this leads us to say in conclusion, that if the reader has a friend who has laid aside his camera from lack of interest or from ill success, it would be mutually beneficial to lend him your copy of THE AMERICAN AMATEUR PHOTOGRAPHER, or, better still, send us his name and address.

THE TRINITY OF TECHNIQUE.—II.

Exposure—(Continued.)

By DR. JOHN NICOL.

POSURE being the most important of all photographic operations, is far too important to be dealt with in the space allotted to each of the articles of this series, a sufficient apology for its continuation.

While the artist, and especially the eccentricist may, for the better carrying out of their deas, give exposures that from a technical point of view are far too short, those may be considered the exceptions that prove the rule that under all circumstances and for all purposes *enough* exposure is a *sine qua non*. Correct exposure would, no doubt, be better, and should be the aim, but "when in doubt play triumph," triumph being the "enough," holds good in photography as in whist; be-

T. Eaton.

"BABYHOOD."

cause, as said in my last, while the latitude of under-exposure is limited that of over-exposure is large.

An examination of any well kept collection of well made photographs of, say, thirty years ago, will show that in spite of the vast improvement in apparatus and material, photographers generally have not only not held their own, so far as technique is concerned, but have largely lost ground, and the reason is not far to seek. The exposure, even with wet collodion, was long, generally limited by the tendency of the surface to dry, and that of the then dry plate much longer; with a latitude in proportion, and with

exposures of from five to fifty minutes, there was no tendency to under-expose, as with a good going pipe and an interesting conversation it was all the other way.

It was different in the studio of the professional. From thirty to sixty seconds, even with the head in the rest, was rather trying, and when "large heads," something approaching life size, were in vogue five to six minutes were often necessary. On one occasion, at the request of the ever popular Professor Blackie, I went with him to the studio of William Nelson in Edinburgh to see that he was "properly executed." The lens was a recent acquisition, five or six inches in diameter, and about sixty inches in focal length, and the camera as like a box-mangle as anything else. Seated in the property chair wrapped in the ever present Shepherd's tartan plaid, and with the equally ever present "kail-runt" walking stick, he patiently sat for two of the five minutes necessary for the impression of the latent image on the wet collodion film; when he sprung from the seat with "hold on for a minute till I stretch my legs," and promenaded backwards and forwards several times, plunking down again with "go ahead again, I'm all right now." It was with their ordinary work, however, that they longed for greater rapidity, and many were the attempts that were made to secure it. In the greater light of to-day it is amusing to read of some of them although most implied merely the slight fogging of the plate so as to hide the bare glass the result of the shortened exposure. Painting the inside of the camera white, a hole in the camera front close to the lens and covering it with red or yellow glass; caps with red, yellow, or blue glass that were placed on the lens either before or after exposure, and even sometimes both, and the plate exposed to their action for a few seconds; or, for those who did not care to be troubled with either, the holding of the focusing cloth in front and a foot or so from the lens after the exposure. So much indeed was pre or post lighting believed in that one man made a handsome sum by going through the country selling a secret method of halving the exposure for something like twenty-five dollars, the method being neither more nor less than holding the plate to the light of a wax vesta for a fraction of a second before exposure. In connection with this there is a story that I think I have told before, but which may be told again. The William Nelson already mentioned was called on by the said "process monger," as such men were called, and listened quietly to all that he had to say on the subject of reducing the exposure by a half, so quietly that if he had been an American he would have thought he had caught another "sucker"; and then he as quietly said, "Yes, it is a grand idea, and especially for me, who like to photograph the bairnies. But I always believe that what one man does another can do, and as I am in no hurry I shall wait till the other fellow

"PORTRAIT," UNIV. OF MICH.
On Gas Light Paper.

By Milton Waide
Fifth Avenue, N. Y.

comes round with a method by which the other half can be abolished and then take them without any exposure at all."

This, however, is aside from my subject and may be dismissed with the statement that the pre-lighting *may* have done more than merely fog the under-exposed shadows. In my previous article I mentioned the fact that before the image could be impressed on the sensitive film a certain amount of inertia had to be overcome, and such pre-lighting may have had that effect. Be that as it may, plates and films are now so sensitive that a fraction of a second under favorable conditions is sufficient to produce the desired effect, the pity being that these conditions are either not understood or not waited for, with the result that in at least 75 per cent. of all the exposures made are out of them, and consequently insufficient.

It might have been supposed that with the increased rapidity of the plates and films, under exposure would have disappeared, but just in proportion to that increase was the lessening of the latitude; and the reaction from long to short, created such a craze for snapping that what I. B. Webster wrote twenty years ago might with as much truth be written to-day. He said "Undertimed photographs are to be seen everywhere, and from all places nearly. It seems to be a common disease among photographers; *stopping off the light just a little too soon*, thereby spoiling what would have been a good production. Every photographer should examine every photograph he comes across, his own work as well as the work of others, with an eye of inquiry: If it is good, find the cause of its being good; if "better," why it is better; if "best," there is certainly a reason for its being so, and an examination by an experienced eye will soon determine wherein it is better, and why it is so; the "better" having got sufficient exposure while the "best" has got what has proved to be the "*correct*."

But while asserting that correct exposure is essential to perfect technique I must admit that there is no royal road to it. Actinometric exposure meters are helpful, and careful observation and study of the record of results still more so; but so long as plates and light are so variable, exposure can never be an exact science; and more, much more, will always depend on the personal equation of the photographer. "Expose for the shadows and let the lights take care of themselves," has become so hackneyed that it has come to be neglected, but the crux of correct exposure is to be found only in that direction. While aiming only at *sufficient* exposure development must be a matter of consideration and the development of the lights must be looked to; but with an exposure that is correct, development may be relegated altogether to *time*, the time indicated by the factor resulting in every light having its own degree of density and every shadow its own depth of detail.

"CLARICE." UNIV. OF MICH.

Geo. Donehower.

How, then, is correct exposure to be secured? Only through observation, study and experiment; and through those it will certainly come. Not perhaps to every one will it be given to *feel*, as it were, just before the removal of the cap or the springing of the shutter just what the exposure should be, as many claim to do. They are not conscious of taking into account the nature of the subject or the light, or being influenced by the appearance of the image on the ground glass; but, as I said, feel as if by instinct how many seconds or fractions thereof will be right, and they rarely make a mistake. But such a power, however valuable, is hardly worth the waiting for, as it can come only by long experience and careful observation, and everything else in connection with the practice of photography has been made so simple and so certain that the beginner cannot see why that should not be as simple as the rest. Nor, after all, is it a *very* difficult matter. Observation during and after development will show one of three things, under, over, or correct exposure; and the correct diagnosis of these is all there is to it. In any case the highest of high lights will appear first, followed by those that should be lesser, but which after the operation, is complete, are as high as the highest with, where shadow detail should be, little else than bare glass. Or, it may be that shortly after the appearance of the highest of high lights the others follow in quick succession, and close on their heels the detail in the shadows; the plate, by reflected light, that is while lying in the dish, becoming all over dark enough to indicate sufficient development, and when fixed showing a very decided lack of contrast. In the case of correct exposure the high lights appear as usual, followed immediately by the lighter shadows and then by those that are darker, each in its order, and when fixed every degree of gradation visible on the ground glass is seen in the negative; which is another way of saying that it is an example of perfect technique.

MONTHLY PRIZE PICTURE COMPETITION.

To encourage those of our readers who are aiming at picture making and only make use of the camera and lens as a means to that end, we will award the sum of five dollars each month for the five best pictures submitted. These pictures will be judged on their artistic merits alone, and those selected will be reproduced so as to convey the *tout ensemble* and color effect as closely as possible. Entries for this competition are not to be confounded with pictures sent for criticism to "Our Portfolio," and the coupon found in our advertising pages must be attached to each picture. All entries for the first competition must be in before March 15, 1904.

(Reo, William Beatty.

COVERING SPACE AT SEVENTY MILES AN HOUR.

Mr. Beatty writes us that the above picture was made last summer near Lewis Center, Ohio, with a Graflex camera, the shutter being speeded to 1-1200 part of a second. He accompanies his letter with the affidavit of the traffic manager of the Big Four Route that the time and conditions are correct **UNIV. OF MICH.**

PYROGRAPHY OR BURNT WOOD ETCHING.

BY F. W. GAENSLEY.

PYROGRAPHY, or the art of burning designs on wood, is one of the most fascinating studies for those who are artistically inclined, be they young or old. Some will say it is only a passing fad which in time will be laid aside for something else. This may truly be said of those who become discouraged at their first attempts, but not so with the patient and ambitious worker, who, by practice and perseverance, becomes so efficient as to be able to trace with the heated pen the masterpieces of artists long laid to rest. Another indication that this branch of art will increase in popularity is that articles of practical utility are being decorated in this manner and are in great demand. Tables, chairs, clock stands, picture frames, work boxes, wall brackets, and many other useful articles of furniture are obtainable in the white wood from the dealers. These, in skilful hands, are transformed into articles of beauty as well as utility, ornaments in any home, and articles which, if sold, sometimes bring fancy prices.

A wood burning outfit is something which no person interested in drawing, sketching, painting or other similar handiwork, should be without, as it brings into practice the same branches of these different lines of work, viz., form, perspective, shading, high lights and shadows, raised effects, etc. Many persons cannot realize what beautiful work can be produced by the burning pen, as mostly all the work on exhibition in the shops is of such a coarse nature. This is no doubt due to the fact that the benzine or gasoline pen and bulb attachment is mostly used by wood burners, it enabling them to work very rapidly and turn out a larger amount of work in less time than by using the gas pen. The benzine pen is no doubt the best for heavy designs, but where delicacy and beauty are to be considered the gas pen is indispensable. The heat can be easily regulated thereby, not only enabling the operator to produce the deep brown (as produced with the benzine pen), but all the delicate shading which is necessary to give a finished appearance to any picture or design.

The beginner in the art can purchase in the supply stores plaques of various forms and other articles on which designs are already traced. Those who wish for more variety will find no difficulty in making their own tracings from scroll designs or from studies by our modern black and white artists, the work of Charles Dana Gibson being especially suitable. Tracing the unconventional and seemingly careless lines of this artist is comparatively easy for the beginner, whereas if studies that demanded more delicate shading were attempted at the start, the worker would no doubt soon be discouraged.

I trust these few words will induce many to take up this interesting work, and those who have laid aside their pens through failure at their first attempts to again take them up and persevere, PERSEVERE. In a series of future articles we will give directions as to how to hold the pen to produce certain effects, how to transfer and combine designs, how to transfer photographs to wood and burn them in while preserving the likeness, and how to add color effects and polish to finished articles.

"CHILDHOOD." UNIV. OF MICH.

Walter Hammond

VARIETY IN LANTERN SLIDE EXHIBITIONS.

By C. L. THORP.

WHO has not felt the monotony of long exhibitions of lantern slides, all of one color, a more or less greyish black; and too often all masked to the same shape and the same size? It is true that during recent years many have broken through the time-honored size and shape, but the need of variety in color is as great as ever.

No doubt many formulæ have been given for the toning of slides, but few, if any, are really successful; as in nine cases out of ten, whatever the color may be by reflected light, they are all, or nearly all, equally opaque to transmitted light; the reds and browns from uranium toning, for example, being, on the screen, hardly distinguishable from the usual black.

Chloride plates can, by varying the exposure and developing accordingly, be made to give colors varying from brown to red, but they are not so easily got as the bromide variety, nor are their keeping qualities so good when they are stocked, hence a method of toning the bromide image is desirable. And the first step is to reconvert the silver image into one or other of the haloids, a bromide, iodide, or chloride; either of which is easily acted on by a long line of chemicals, some giving colors of great beauty, but not all of sufficient transparency. Whatever it is, and whatever the color by reflected light, it is essential that it shall be transparent to transmitted light, be a stain as it were through which light shall not only pass to the screen, but that it shall carry the color with it.

To convert the image into silver bromide the slide may be immersed in the following solution and allowed to remain till bleached, till white on both sides, and then thoroughly washed.

Copper sulphate	200 grains.
Potassium bromide.....	200 . "
Water	10 ounces.

Immersion in the same way in the following solution will convert the image into silver iodide.

Iodine	40 grains.
Potassium iodide.....	110 . "
Water	10 ounces.

While to convert it into silver chloride the following may be employed in the same way:

Potassium bichromate.....	25 grains.
Sodium chloride (common salt)	50 . "
Acid nitric.....	20 minims.
Water	10 ounces.

In all cases the slides should be thoroughly washed after the bleaching operation, and should the silver iodide retain a trace of blue it may be removed by a short immersion in a five per cent. solution of sodium sulphite, the last trace of which, of course, must be removed by washing. These operations may be carried on in dull diffused light, although the less white light that come in contact with them the better; and it should be remembered that whatever method of after toning may be resorted to, the

No. 1714.

"ACROSS THE BAY."

C. F. Clarke.

No 1706.

"EVENING."

Jules A. Bourquin.

ultimate shade and the purity thereof depends to a considerable extent on the beauty of the original image; the more perfect from a technical point of view the more beautiful the toned picture. It should also be distinctly understood that the conversion or bleaching must be complete, as if some unconverted silver remain it will be opaque to the light, a nucleus of black in an envelopment of transparent, say, sulphide, that will considerably degrade the image on the screen.

The halogenized images are now ready for further treatment, for the application of one or other of the many bodies that in combination with the particular haloid shall practically redevelop the almost invisible image into one that is not only visible, but that shall be, at will, anything from

Geo. G. Rockwood.

PORTRAITURE WITH THE COOPER-HEWITT LIGHT.

black to all shades of brown and various shades of red; and that, not only by reflected, but also by transmitted light: the colors, in other words, being not solid, but transparent.

But just what those chemical reagents are to be I am not yet in a position to say. I have been experimenting with the usual mixture of success and failure, but with sufficient of the former to warrant me in promising to return to the subject in an optimistic state.

In the meantime there are three reagents that I can recommend for the production of warm tones ranging from a dark brown to a red, and with them, and a little experience, especially in the developing of the original image—as on that much very much depends; the slide maker may secure a sufficient variety in any particular set to relieve the monotony incident to an exhibition of slides altogether black and white. They are Schlippe's

salt (sodium sulph-antimoniate) in five per cent. solution; sodium sulphide of about half that strength; and ammonium sulphide about one in a hundred. This last, however, has such a disagreeable smell that it should be employed only out of doors or under a chimney with a good draught. Into either of these solutions the halogenized and well washed slide is placed and carefully watched till the desired color is obtained, swabed with a tuft of cotton and dried. Experience in this as in all other phases of work is necessary, and it should be gained with failures rather than good slides, but the observant worker will soon master the method and be able to do pretty much as he likes.

ACTINIC OPACITY.

BY FRANK M. STEADMAN.

THE assertion made by me in my talk at the Indianapolis convention regard to the great percentage of the actinic power of the light that is removed by the common window glass, seems to have been met with the greatest of incredulity on the part of many workers. I well know that the prevailing opinion with regard to that matter is that that percentage is much less than I have stated. The matter is in truth one of the greatest importance in photographic exposure, for to be able to make an exposure in ONE-THIRD of the time by simply lowering a common window glass is to accomplish at no cost what would "come high" indeed if it were secured by purchasing one of the fastest new lenses, say the planar, which is listed at \$150 for the 5x7 or 5x8, I have forgotten which.

At the start I take this stand: that photographic action is performed by that quality of light which is known as "actinism," both in printing out papers and in the sensitive emulsions of the dry plate and film and that the former action, being visible, is, by the rapidity of its progress, a true test or measurement of the intensity that any given light creates upon its surface.

If this stand be correctly taken then any printing out paper may be chosen to act as an actinometer in measuring the different intensities that may be created upon its surface.

I wish to leave the following tests in the hands of the readers of the AMERICAN AMATEUR PHOTOGRAPHER, and will be pleased to have them report to the editors (on a postal card in few words) the result of their experiments and their decisions as to the percentage of light that their common window glass takes away from the paper when made to intervene between it and the pure sky.

Find a common window, through the upper sash of which the sky can be plainly seen, and let that sash down as far as it will drop. Have a person sit down about a step from the window so as to find the place where the paper should be held. Now take a piece of solio or some such paper and place it so that a small square of it will be exposed through a hole in some opaque paper. (This hole may be cut in the cover of a common pocket note book and the paper strip placed behind the hole.) Now hold this book

so that the paper is the height of the head of the person and expose it to the light of the pure unobstructed sky for, say, ten seconds, and a plain tint will probably be secured unless the day is very dark indeed. (Tint another ten, or as much time as is necessary in case a tint is not secured in the first ten seconds.)

Then raise the sash and move the paper so that the tinted square will be at the side of the hole and a fresh place ready for tinting. Now with the sash raised so as to fill the window opening between the sky and the paper, give enough time to create the same tint that was obtained before in ten seconds. (Or whatever number was given first.)

By bringing the paper to the same tint each time is simply making the amounts of labor done agree in the two cases and the problem is to find from the difference in the time required, the relative strengths of the two light sources, without and with the glass.

The following is a simple statement of the problem: If by a certain light a certain tint is obtained on the sensitive paper in ten seconds, what is the intensity of a light that would do the same labor in twenty seconds?

If the latter should work with one-half the speed as the former, it is evident that one-half of the former power has been removed from the sky power of the intervening glass.

The glass being transparent this test is true theoretically as well as practically, because that part of the sky which does the work in the first instance with the window open does it also when the window is made to intervene, the light rays passing practically straight through the glass.

The glass disposes of those rays in four different manners: By reflection, radiation (or diffused reflection as in the case of solid surfaces), absorption and transmission. The more turbid the glass the more radiation and absorption takes place, and the clearer it is the more reflection and transmission predominate.

If the window be of ground-glass the measurement has no theoretical application whatever as by the breaking up of the STRAIGHT RAY transmission simply makes a new and entirely independent light source for the paper to be tinted from. This new light source may be either of higher or lower point value than the sky with the window open, according to the character of its own light source. For example, if the direct rays of the sun be shining on the ground-glass it would be much brighter than if the sky alone was lighting it. This is simply a matter of circumstance and will vary with every skylight in various studios.

A practical comparison may, however, be made between the ground glass, corrugated or tissue covered window and the pure sky, although no measurement is possible. To make such a comparison proceed as follows: Take a common one pound soda box, either paper or tin, and cut a small hole in the bottom, through which the paper may be tinted. Select a place under the skylight for the imaginary sitter and arrange the curtains just as you would have them in making the photograph. Now place a strip of the solio over the bottom of the box and cover it with something so that it may be held up close to the hole, and go out of doors and from some shaded place turn the box up toward that part of the sky which would illuminate the face of your sitter provided no glass whatever was in the window, re-

move the lid from the box, and expose the paper any fixed number of seconds so that a visible tint is obtained. Ten seconds will probably be sufficient to get a good tint. Then go in the studio and after moving the paper to a fresh place stand in the position of the sitter and hold up the box to the skylight long enough to create the same tint.

This gives a practical comparison of the two conditions. If the day is cloudy or the skylight darkened by buildings the result will be very unfavorable to the ground or other diffusing light, but if the sun is shining brightly upon it the comparison will be more favorable to it. The use of the box simply limits the light source to the same relative position or size, in relation to the tinting paper, under both conditions.

The following photographers of Rochester have kindly allowed me to compare the skylights of their studios in the above manner, and they have each given me permission to state that they fully agree with the test. The condition of the different lights is given below :

	Tinted under pure sky.	Under sky- light to match tint.	Relative speed of "sky-light."	Percentage of reduction.
C. H. Smith (Smith, Curry Studio)	10 seconds	60 Sec.	$\frac{1}{6}$ th	83- $\frac{1}{3}$ %
John W. Taylor.....	10 seconds	40 Sec.	$\frac{1}{4}$ th	75-%
E. E. Calhoun.....	10 seconds	80 Sec.	$\frac{1}{8}$ th	87- $\frac{1}{2}$ %

The top light of Mr. Smith's studio is of clear glass but covered with some kind of diffusing mixture. The others tested are ground glass.

I have used solio paper as an actinometer for the last four or five years in the "at home" method of working where the exposures are made in different houses every day and at different hours of the day and seasons of the year, and during the last three years of that time there has not been a single negative lost through under or over-exposure. The average of about ten exposures daily has been maintained during that time. I state this to show that the sensitiveness of the solio paper in tinting and of the emulsion in being effected in the latent image may be made to practically agree with each other and the *visible* effect being made to register in advance a measurement of the *invisible* effect. This proves that it is the same thing, ACTINISM, that does the work in both cases. I have learned during that time to rely upon the solio for exposure, and when it tells me that a *just plainly observable tint* is secured with the window open in four seconds and through the glass, in from eight to ten seconds, I understand by that that from fifty to sixty per cent. of the light is kept from the solio by the intervention of the glass. There is a difference between common window glasses, some being greener and some thicker than others.

Among the officers of the P. A. of A. whom, with a number of other gentlemen, I met on the night before the Indianapolis convention was called, there was not one man who would believe my statement concerning the percentage of actinism cut off by common glass, the opinions concerning that percentage ranging from five to twelve per cent. During the convention I had occasion to demonstrate the simple window test as given in this article, and no one who saw the test made could deny that the statement was absolutely true, although they were each greatly surprised at so great a lessening of the light's power on passing the window.

I have never found a common window glass that turned away less than 50 per cent. of the light and usually the percentage is about sixty, the tint produced in ten seconds with the window open requiring about twenty-five with the glass in place. In figuring the percentage simply place the ten above a line and the number of seconds required to get the same tint with the glass in place below it, and the fraction will be the part of the actinic force that is transmitted. Thus: If ten seconds were given to the pure sky and twenty were needed to get the same tint through the glass, then the fraction would be $10/20$, and the latter intensity would be one-half that of the former, and therefore 50 per cent. of the former strength was taken away.

This is a most intensely interesting question for the home worker, and I hope that the shortly worded postal cards to the editors will indicate that the matter has been tested by many of the readers.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

The Camera, usually correct in its answers to correspondents, makes a slip in regard to "Methylated Spirit," a thing unknown in this country, but one that frequently appears in formulæ originating in Britain. The correspondent referred to is told that methylated spirit is "wood alcohol," but he will most likely be disappointed if he uses that instead of the article mentioned in the formula if it has a British origin. Methylated spirit or methylated alcohol is ordinary alcohol to which has been added a quantity, first, of methyl alcohol or wood spirit with a view of making it undrinkable, and sold for art and trade purposes free of duty; the price of alcohol, duty paid, being about \$5.28 a British gallon, while after the addition of the wood spirit it may be bought for under \$1. Nauseous, however, as wood spirit is, the Government discovered that it was being consumed in large quantities, sometimes as it was, and oftener with the addition of peppermint or other flavoring oils, and mineral naphtha was substituted for the wood spirit. That prevented its use for many of the purposes for which the older variety was employed, and the powers that be, who lend a more willing ear to the wants of the people than apparently does ours, have made arrangements by which the older variety may be obtained by those to whom it is essential.

* * *

R. H. A., in *The Photographic News*, starts a train of thought in connection with rapid exposures, that, to me at least, throws new light on the subject. Time is only a relative term, and *what* may be done in it depends largely on *how* it is done. The energy latent in coal is not different from that latent in oats, and yet the one developed by the dynamo, and driving a train at sixty miles an hour is very different from the other developed through the horse hauling a carriage at six. When it comes to a question of speed, however, nothing that we know, unless perhaps one of the rays

from radium, comes within measurable distance of light, which is said to travel at the rate of about 190,000 miles a second; and the thought that a bundle of rays the size of the diaphragm, each carrying actinism on its wings, and passing through the lens and impinging on the plate at such a rate must make the shortest exposure seem long. With the shutter set at the 1-20th of a second we have a stream of actinism bearing light 9,500 miles long, and even at the 1-1000th, if any one should care to try such a short exposure, the stream would still be 190 miles. With this in mind, the speed of the most rapid plate does not seem such a wonderful thing after all. Supposing that the difference between the unaltered silver bromide and that on which the image has been impressed is merely mechanical, an alteration in the arrangement of the atoms or molecules, which, as they are supposed to be in constant motion, it is not difficult to believe that a stream of actinic laden ether vibrating either something less than even 190 miles in length would considerably effect it.

NOTES.

SUGGESTIVE TITLES.—In a recent lecture on landscape photography the speaker strongly recommended the thinking of a suggestive title, a quotation from some of the poets, for example, such as "The shy recesses of the woodland," or "The mellowed richness on the clustered trees"; something suggested by the selected scene, and then to work up to it in exposure development and printing. Those whose memories are not stored with such quotations might do worse than keep on hand a list of such as might be suitable, and from experience we can say that it will be found very useful, and add considerably to the success of their work.

FULL EXPOSURE.—At a recent meeting of the London Camera Club a Mr. Ashton, who had recently returned from India, showed a series of lantern slides which, although they included many of the white palaces and tombs in all the blaze of brilliant sunlight, were full of delicate gradation in both light and shade. They were, in fact, as nearly perfect as it seemed possible to make, and in reply to a query as to how he managed it under such circumstances, said the secret of how to produce the best results in cases of extreme light was to *give very, very full exposures*.

MEDICAL PHOTOGRAPHY.—The pictorialist is apt to think of photography as an aid to picture making, or at least to regard that as its most important phase, but the following, which we clip from the *British Journal of Photography*, will show that he is mistaken:

If we turn to a recent issue of the *British Medical Journal* we can see to what perfection the modern method of illustrating the etiology of a disease can be carried. The pictures in question refer to the recent Report on Sleeping Sickness in Uganda which has been presented to the Royal Society. This mysterious and fatal malady has been traced to the bite of

the Tsetse fly, which infects the blood of its victim with a microscopic organism called a Trypanosoma, just in the same way that a certain species of mosquito is responsible for the spreading of malaria. In the journal referred to is published a series of excellent photographs which will be of the greatest service to medical men and others. First is shown a picture of *Glossina pallicera*, a species of Tsetse which might easily be mistaken for the real delinquent, whose name is *G. palpalis*, a photograph of which is also given. At first sight the two flies appear to be identical, but closer examination soon shows several minute differences of structure. Next is shown some fine photomicrographs of the Trypanosomes of sleeping sickness, which have been found in the cerebro-spinal fluid of various patients. Another kind of Tsetse fly which is the carrier of Nagana, the fly disease of horses, together with its larva and pupa, is also pictured here. But perhaps the most interesting photographs of all are those of the victims of the malady. One is a black boy, aged sixteen, coiled up in what appears to be natural sleep, but is in reality a sleep which in two days' time ended in death. Another younger boy, also asleep, died fourteen days after the picture was taken. Two photographs of sleeping monkeys, in which the sickness had been produced experimentally, are also published, together with photo-micrographs of Trypanosomes taken from the blood of a monkey which had died of the disease. It need hardly be pointed out how valuable such pictures are as illustrations to the Report on Sleeping Sickness. May we not assume that in the near future the text-books of both medicine and surgery will be abundantly illustrated in the same masterly and convincing manner?

ORTHOCHROMATISM being one of our targets for the year, we are pleased to record the fact that one of the oldest and most popular of British plate makers, Wratten and Wainwright, have introduced two new brands of plates, the Verichrome and the Allochrome, both sensitive to all three rays of the spectrum, and the one intended for the field, the studio and the process room, the other for adverse climatic conditions, whatever that may mean. The one has a sensitiveness of f-64, and the other of f-100 Wynne, and according to some of our exchanges, they are both in quality quite equal to the plates so long sent out by the firm, which is saying that they are as near perfection as dry plates can be expected to be. We recognize this as another step in the progress towards the time when there shall not be an unorthochromatic plate or film on the market.

LABORATORY FOR ORIGINAL RESEARCH.—The Royal Photographic Society has taken the first step towards the realization of the dream of its president, Sir W. de W. Abney, exploited in his jubilee address, in the appointment of a committee of a dozen of the best known names in connection with the scientific phase of photography. The committee are to consider the feasibility of establishing a research laboratory with all the necessary instruments and appliances for the bringing to light of the secrets of photography; to prepare details of the scheme, and to make suggestions as to the raising of the necessary funds. When will a Carnegie or a Rockefeller be inspired to supply the necessary funds here? Abney never said a truer word than that he never saw a busy man who did not find time for

some scientific work, and if we had the laboratory with all the necessary appliances there would be no lack of suitable men.

BRITAIN'S PHOTOGRAPHY AT THE ST. LOUIS EXPOSITION.—We understand that Great Britain's old buildings, old customs and costumes, and even some of the more recent events of historical interest, will be represented by about 300 prints from the collection of Sir Benjamin Stone, and its pictorial work by about the same number from the work of a selection of the best men in the United Kingdom. Of the scientific phase we have not yet heard, but it is in the hands of Sir W. de W. Abney, so that we may be sure that it will be well to the fore.

DAYLIGHT DEVELOPMENT.—Lumiere and Seyewetz have been experimenting with a view to finding the most suitable coloring matter with which to color either the solution or the plate during daylight development, and for the latter they find nothing better than what is known as Crocein scarlet 3B, and at present being exploited as "Coxin," its use for that purpose having been patented by J. N. Ludwig. Their idea was, if possible, to find a colorless substance that would prevent the further action of light without destroying the already impressed image, but they failed, finding nothing that would do the one without doing the other. After trying many things with more or less success they ultimately settled on certain salts of picric acid, especially the magnesian, which, in combination with sodium sulphite, answers admirably. They recommend for general use a mixture of two parts anhydrous sodium sulphite and one part of magnesium picrate, this mixture being called "Chrysosulphite No. 1," while a mixture of 100 parts of anhydrous sodium sulphite and 15 parts of magnesium picrate is called by the authors "Chrysosulphite No. 2." These mixtures may be added to almost any one of the ordinary developers.

THE COOPER-HEWITT MERCURY VAPOR LAMP that we have several times noticed, and of which we expect great things in connection with photography, is being *discovered* by the process worker; one of them, as will be seen from the following extract from the catalogue issued by the Cooper-Hewitt Electric Co. of 220 West Twenty-ninth street, New York, finding that with it he can do, and in less time, with 10 amperes what with the "focusing lamp" required 100 amperes.

"For process work it is far ahead of any arc lamp ever constructed, and once an operator has used the vapor lamp he appreciates its value. The great diffusion of light gives perfect evenness of illumination over the copy, and for matt surface prints, like aristo platino, this diffusion entirely eliminates the appearance of grain, which is so troublesome where arc lamps are used. I heard one operator say that he would not know how to make half-tones from 'grainy' copy without the vapor lamps.

"Personally, I have been using these lamps for over two years with the greatest satisfaction. In fact, it would not be possible to do the particular work for which they were installed, *at all times*, without great expense of time and power. Previous to their adoption it required for the same purpose four 25 ampere focusing arc lamps (100 amperes), giving a yellow light and requiring a prolonged exposure. Three U type vapor lamps

consuming altogether about 10 amperes do the work now with much less time for exposure.

THE VERANT.—At a recent meeting of the Royal Photographic Society Dr. Moritz von Rohr read a paper on the Verant and showed the instrument, at the same time saying that they would soon be on the market at a cost of about twenty-five shillings, but, thanks to our tariff, it will cost a good deal more when it comes to this side.

Briefly stated, the Verant is an instrument by which the apparently ludicrous perspective caused by the use of lenses of too short focus is overcome or corrected; or, in other words, by which photographs taken from a too near standpoint appear as if taken from one that is correct. The description and illustrations occupy eleven pages of *The Photographic Journal*, is much too long for the space at our disposal, but the use of the instrument may be summed up in the following quotation, and the accompanying cut will show something of the appearance of the instrument. "Summing up, we come to the following conclusions: supposing we have a Verant lens of the focal length of the camera objective, a normal eye will obtain, through the Verant, as far as perspective and accommodation is concerned, the same impression it would obtain from the natural landscape when brought to the place of the entrance pupil of the camera lens. And if color is neglected the impression caused by the photograph will exactly correspond with that exercised by the natural objects.

VERANT IN USE.

"This necessarily affects our apprehension of relief, and our estimation of distance must correspond with the conclusions we should derive from monocular inspection of the objects themselves."

BURNT WOOD WORK.

At the request of several of our readers, we have opened a department for this interesting branch of art. While it is not strictly within our lines, yet the principles underlying both branches of art are closely related and pyrographic outfits are handled by so many photographic supply stores that we presume the majority of our readers are already interested in or familiar with the work. We hope that our readers will show sufficient active interest to warrant the continuation of such a department, and we solicit articles and practical hints from experienced workers. A department of correspondence will be opened and all questions will be answered by an expert on the subject.

TONING BROMIDE PRINTS TO AN EMERALD GREEN.

ANY formulæ have been given for the toning of bromide prints to a pure green, but none have been quite satisfactory, most of them giving a degraded blue rather than a pure green. Sometime ago Professor Namias published a method that gave fairly good results, but it entailed the previous bleaching of the image and was otherwise open to considerable objection. Taking it as his starting point, however, C. Winthorpe Somerville wrought out a formula and method that on trial we found all that could be desired.

We reproduce it as it appeared in *The Photographic News*, although we made some slight alterations, more in the preparation than in the proportions of the material.

The print is soaked in water for a minute or so to make it quite flacid, and then completely drained. The following solution is prepared, and may be made to any volume, but the weights of the various ingredients must be strictly adhered to, as a variation of a quarter of a grain in two of them will make a great difference:

Vanadium chloride	2 grs.	2.0 g.
Ferric oxalate	1 gr.	1.0 g.
Ferric chloride (perchloride of iron)	1 gr.	1.0 g.
Potassium ferricyanide	2 grs.	2.0 g.
Saturated solution of oxalic acid.....	120 minims.	120 c.c.
Water to.....	4 ozs.	2,000 c.c.

Make a stock solution of vanadium chloride by putting the salt *into a bottle*, and adding a *hot* 5 per cent. solution of hydrochloric acid in sufficient quantity to make 60 minims of solution contain one grain of the vanadium.

The toning solution is prepared by adding the vanadium to the oxalic acid, then the ferric oxalate, then the ferric chloride, and some of the water, and, lastly, stirring the while, add slowly the potassium ferricyanide, and make up with water. The solution should be of a light green color, and quite clear. If a precipitate occurs, the proportions have not been correct. One print, however, may be toned in this precipitated solution, but the result is not very definite. As the vanadium is the only expensive salt, it is perhaps advisable to add it last of all, as it is only the addition of the potassium ferricyanide that would cause a precipitate. The print is placed in the dish, and the solution poured over it—not necessarily sufficient to cover it—and the dish rocked or not as desired. Toning is visible in about half a minute, and—what is very disappointing—is *not green*, but a slate blue, which continues to a final bright slate blue, tinged with green, the time occupied being about four or five minutes. Toning should be carried out till the lightest half-tones of the print are tinted, but may be stopped at any stage, the depth of tint depending on the time of immersion. The toned print is transferred to the washing water, where it will be seen that a bluish tint comes into the whites and high lights. Immersion in the

water from ten minutes to one or two hours will entirely remove this, the time being dependent on the length of toning and the texture and nature of the paper on which the print is made. This soaking in water destroys the blue tint, leaving a pure dark emerald green.

If the washing is prolonged for many hours, the tone will disappear owing to the alkalinity of the water affecting the iron vanadium salt, but the color may be returned by applying a weak solution of oxalic acid, about two per cent. strength. A few changes in clean or running water is advisable before drying the print.

Immediately after toning, the green tint may be produced by slightly rinsing in water, and then applying a very weak solution of ammonia, about 1 in 10,000 strength.

A tint, varying from olive to sage green, may be obtained with a complete elimination of the blue stain by applying a five per cent. solution of sulphate of zinc acidified with oxalic acid immediately after toning.

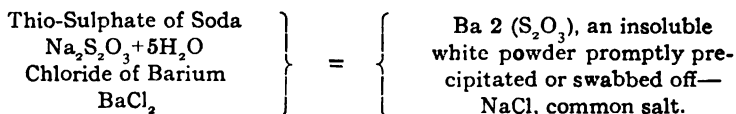
The original values in the scale of gradation are faithfully preserved, and the shadows, instead of being raised to the green, the green is imparted to them, thus retaining their original depth, while the high lights remain perfectly white.

It is advisable when mounting prints with a paste to be sure that it is not alkaline, but quite neutral.

PRINTS FREED FROM HYPO IN FIVE MINUTES.

JOHN NOTON sends the following communication to *The British Journal of Photography*, having hit on probably the best hypo eliminator that has as yet been proposed, although we doubt whether the common salt can be removed with even five minutes' swabbing.

It is evident to everyone that the usual four hours' washing of photographs to eliminate the hypo is the cause of an enormous waste of water and time. Probably millions of gallons of water every week are wasted in this way. On this account I gave some attention to the matter, and have found a remedy which I desire to put before your readers. By my process five minutes is sufficient, instead of the four hours. Most chemists know that barium chloride has an exceedingly strong affinity for sulphur; it is even more energetic in this respect than lime. The formula of its action may be shown below:



This shows that by adding barium chloride to hyposulphite of soda both are broken up instantly. The barium unites with the sulphur and the soda with the chlorine, so that the products are barium sulphate and common salt. Now, barium sulphate, in this case, is a loose, very heavy, white (poisonous) powder, quite insoluble, easily rinsed off the photos, and the common salt remains in the solution. It has long been known that even

common salt alone tends to quicken the process of hypo elimination. Then the process is quite simple. It is this: Make a five per cent. solution (exactitude is not necessary) of this barium chloride—which is not expensive. Keep in a separate tray.

When the prints have been developed and have been ten minutes in the hypo, rinse them for a minute in running water, and swab, if you will, on both sides with a cotton swab. Then dip for two minutes in the barium chloride, afterwards rinse again and swab the prints in the running water. That is all. Five minutes is sufficient, instead of the four hours. I find, also, that the whites of the prints are improved by this process.

Your readers will no doubt vote to me a monument for this invention; but also, I think, I have a fair claim to the gratitude of water supply companies.

PHOTOGRAPHING SNOW SCENES.

A MUCH respected correspondent writes, "Dear Doctor, I want some snow scenes and I want them bad (he doesn't mean the scenes), but am tired reading about how to make them by fellows who apparently know as little about it as I do, so *please* don't let them write any more unless their advice is accompanied by proof of its value." Good advice which, as a rule, we mean to take, but make an exception of the following, which we clip from a foreign exchange, both because we know the advice to be good, just what we have given dozens of times, and because the Editor says of the work of the author that it is the best he has ever seen.

"I always use a rapid color sensitive plate, and a very pale home-made naphthol yellow filter, which increases the exposure but twice, and give full exposure—in fact, slightly over-expose and develop with metol alone and never get a dense negative, thus I get an absence of black detailless shadows and chalky high lights devoid of detail. As to the stop—well, I use that which gives me all the definition I want, which is usually confined to the near and mid-distant planes and with the distances softened down. This I effect by focusing on a fairly near point in the foreground with full aperture, and then stopping down till I get the requisite sharpness in the mid-distance. Of course, on this point, neither I nor anyone else can really advise anyone, for the simple reason that this point at least must be entirely a matter of personal equation. I never make an exposure in the middle of the day—always early morning or late afternoon, when, with a low sun, the shadows are longer and are much easier to compose into a picture.

"I have two main principles which I follow: either all the shadows must extend from the distance to the lens, or *vice versa*—the former I prefer, or, if they cross the picture, they must converge to a black point. Never do I take a flat, plain surface if it is not broken up with hollows and shadows, which are extremely easy to find in Switzerland. I take care to break it up by trampling three or four lines of footsteps to a definite point in the picture. Naturally, many may say that this is too much trouble. But it is not. If I get two pictures a day it is quite enough, particularly as I work whole plates, and price is a consideration when I regard the depth of my purse."

THE FERRICYANIDE-HYPO (FARMER'S) REDUCER.

BY HAROLD BAKER.

IN a recent letter on persulphate for reducing negatives some objections are made to ferricyanide on the ground of its causing stains and eating away shadow detail. These defects are not inherent in the reducer, but in the methods of using it. When negatives are free from pyro no stain is caused; but if they are taken straight from an old fixing bath contaminated with pyro, and placed in ferricyanide, stains are sure to be caused, and they seem almost incapable of being removed, although some of the stain disappears in the subsequent washing. If a negative is to be reduced with ferricyanide, it should be washed after fixing for at least five minutes, to remove hypo solution containing developer, and if pyro has been used the washing should be longer; and in all cases fresh hypo should be used for making up the reducing solution. After reduction the negative should be fixed again for half a minute in order that any undissolved ferrocyanide of silver may be cleared away. I have used the Howard-Farmer reducer for many years, and always keep some of it ready in the dark room. My method is to put half a pound of ferricyanide into an old pyro bottle, which is filled up with water and occasionally shaken. This forms practically a saturated solution. This method may not be very scientific, but in my hands it answers very well, and I have used it for ten years or more. When a negative has to be reduced, a few crystals of hypo are put into a dish, and, if the weather is cold, some warm water is poured over them. (At this time of year I always have some warm water handy in the dark room.) Some of the saturated solution is poured into the dish, the amount being regulated by the nature and amount of reduction desired. If the negative is too dense, and likely to produce a hard print, the reducing solution is used very strong, and the amount of hypo, at the same time, is made proportionate. The water-tap should be turned on and the dish of solution kept close to it, the negative is plunged into the reducer and rocked vigorously for three or four seconds, then snatched from the dish and held under the tap, before being examined for density. It will be found that the highlights have been reduced in greater proportion than the shadows. The latter, as a rule, do not appear to have been affected at all, and the result is a reduction of contrast. This method is rather heroic, and there is certainly some danger of unequal reduction, but experience and practice, as in all other photographic manipulations, will make the process easy and safe. The reduction seems more certain if the negative has not been dried, and it is not necessary that it should have been thoroughly washed, but the greater part of the fixing solution should have been removed from the film. If it is necessary to reduce a negative that has been dried or even varnished it can be done, but the *whole* of the varnish must be removed and the film softened by soaking, for an hour or so, in water. After reducing in this way it is advisable to refix the negative, to remove any ferrocyanide of silver that may be undissolved.

When the negative is not hard, but too dense generally, so that it would print slowly, the same reducer will put matters right, but it should be used a great deal weaker, and the operation will take perhaps a minute or more. A general reduction of density then seems to take place, lights and shadows in about the same proportion. The negative should be removed from the dish from time to time during the process, and rinsed under the tap and examined for density. It is probably not necessary to refix after this method.

Sometimes it is necessary to reduce the shadows of a negative without touching the high-light, as, for instance, a copy of a line-drawing in which from over-exposure the fine lines are obscured. Again the ferricyanide comes in, but it must be very diluted this time, and the process may take three or four minutes. Now, the shadows seem to be reduced most, and the high-lights appear to be affected but little, if at all. The same strength of solution is very useful for *clearing* lantern slides, especially when carbonate of ammonium has been used in the developer, as it sometimes leaves a brownish yellow deposit all over the film. This will generally yield to the weak reducer, without affecting the general density of the slide, in any appreciable degree. I usually judge the strength of the solution by its color; not very scientific, again; but, fortunately, photography, like tailoring, has not been reduced to the level of an exact science. I should not advise any one to make a first attempt on a valuable negative, but to experiment with a few wasters, for if other photographers are like myself they will have plenty to work upon.

But perhaps my chief use of the Howard-Farmer reducer is for local reduction, and here I think it is without a rival. For this purpose it should be used neither so strong as to act very quickly, nor so weak as to reduce slowly. It is not suitable for very small spaces; Globe metal polish and wash-leather is better for them. But for fairly large patches it is excellent, and may be applied with a camel-hair mop or a tuft of cotton-wool. For my own part I prefer the fingers, using three fingers for large patches, two for smaller ones, and one finger for smaller still; cotton-wool sometimes leaves streaky marks, and puts on so much solution that it runs where it is not wanted, but the fingers do not leave streaks and put on just enough and not too much. During the process the negative must be rinsed every few seconds, and the progress of the reduction examined. This method is useful for emphasizing some principal objects by reducing the strength of more subordinate ones, and so on, for removing halation in interiors, and for taking down the harsh whites in landscapes, where a piece of road runs out at the bottom of the negative, and for a host of other things. Then it has another use, for removing those iridescent stains that appear when plates are stale and have been developed with ammonia; for this purpose it may be used so weak that it will not affect the image. The reducer that has been used for plates will remove those nasty stains that come on dishes that have been used for pyro and ammonia. In fact, to parody the well-known puff, no dark room is complete without it.—*The British Journal of Photography*.

STOPS AND THEIR DESIGNATIONS.

ONE of the mistakes which the Royal Photographic Society has made in the course of its fifty years' existence—and in so long a career a few mistakes are inevitable—is to be found in the unfortunate method of numbering stops which it put forward in 1882.

The system was characterized from beginning to end by futility, and bore all over it the stamp of the theorist and doctrinaire, rather than of the practical working photographer, with whom it lay eventually to decide upon the adoption or rejection of the method then devised. Even its very title—the “U. S.” method, as it is called—labors under the disadvantages that it suggests inevitably that the system is American in origin, most people assuming that “U. S.” is an abbreviation of “United States.”

As, however, there are still a great many lenses marked according to this method, a list that includes all the kodaks, or, at any rate, all that are put upon the British market, there are many who very naturally wish to know something about it, and we are constantly assailed through the medium of our “Questions and Replies” with requests for information. A word or two, therefore, on the subject may not be altogether out of season.

The system itself is best explained by a few words upon its origin. At the time that it was instituted it was supposed that f-4 was the boundary in the direction of rapidity, beyond which the utmost optical skill and science were unable to pass. The committee of the then Photographic Society of Great Britain, which was appointed to devise some standard system for marking stops, determined therefore to make f-4 the unit of its system. It further decided that taking f-4 as 1, the other stops should be denoted by numerals representing the relative exposures which they required. Thus, f-8 requiring four times the exposure necessary with f-4, f-8 was known as 4. In like manner f-16 requiring sixteen times was called 16, and f-32, which needs sixty-four times, was called 64.

All very nice and orderly and methodical on paper, but in actual everyday use it is not so simple. Say we are using stop U. S. 18, and we change to U. S. 5, unless the exposure with U. S. 18 is exactly eighteen seconds, it is not easy at a moment's notice to calculate out the exposure required with U. S. 5. We have selected these odd numbers rather than taking as our examples the U. S. equivalents for f-8, f-11, f-16, etc., because they are precisely the cases which are supposed to be dealt with so effectively by the U. S. system.

As a matter of fact, a very sensible custom has determined that all stops shall be constructed in such series that going from large to small openings each stop requires double the exposure of the one immediately before it. The intermediate sizes in practice are not wanted, and are not supplied, the consequence of this is that relative exposures are determined in the simplest and readiest manner by halving or doubling for each successive stop. This is the easiest of all mental processes in which numbers play a part, and so long as the stops are made in this ratio, the only need for marking them at all is to enable one lens to be compared with another.

The basis of this method of stop numbering is, not an arbitrary f -4, but the focus of the lens itself or f , and the convenience and ease of the method are responsible for its very general use.—*Photography*.

[It is to the credit of the Royal that having recognized the faults of the U. S. system it recommended its abolishment and a return to a mathematical instead of an empirical method. We earnestly hope that the opticians in this country who still adhere to the faulty system will soon follow the good example.—EDS.]

MAKING TRANSPARENCIES FOR ENLARGING.

ONE of the most interesting, as well as profitable operations in amateur photography, is to see grow from small beginnings large size pictures, and so simple is it, too, when gone about with discretion, that no hesitation need be felt in making the attempt. But just as it may prove a process offering ample rewards for any care and labor involved, so also must it be stated that unless care in each stage be exercised, it will most certainly prove but wasted energy, for every fault possessed by the original negative will not only be apparent but exaggerated, just in proportion to the amount of enlargement given and lack of care exhibited. It is useless proceeding until the original negative has received full consideration, and if found needful being treated in whatsoever way its character may suggest.

A word regarding the most suitable kind of negative to make a start from when really good results are desired.

It must be full of detail, exceedingly thin—that is, the high-lights must not have been developed anything like up to full printing density, or difficulty will assuredly be found in obtaining a final large negative in any other condition but one, where shadow details will print while those in the high-lights prove entirely wanting. It may of course be done by shading and over-exposing, but it is at best a makeshift affair, and never so successful as when the original negative has been specially made for enlarging purposes, or where it has by treatment been brought into a suitable condition for the purpose. Supposing the small negative of some subject to have been obtained and it is desired to do a large picture of it in one or other of the unquestionably permanent printing processes, if on testing the negative by contact printing it be found to give a really good result on any of the silver papers, the probabilities are it is not in the best condition to start from in making a much enlarged replica of it.

Think it over, and ask yourself, Is it worth the trouble and cost of doing in a large size? If you decide it is, then make up your mind that, pretty and good as it may seem, the original negative has to be sacrificed as a final result, and simply become a step in the several stages which must be gone through before any successful end may be reached. What does this mean, you ask? Why, the density it requires to give enough contrast for contact printing must be destroyed until it is reduced into a state of flatness, which will bring both ends of the scale of gradation much closer together. How

may this be done? To understand it is necessary to know what is likely to take place if it be subjected to reducing action. Some chemicals as is perfectly well known, attack a metallic deposit evenly all over, others will do the reverse, or appear to do so. For instance, to leave such a plate in a bath of cyanide reducer would end in complete elimination of all shadow detail, long before the more strongly-defined parts had been destroyed, and clear glass in the shadows would quickly be the result; but were you to place it in a bath of persulphate of ammonium, something approaching the reverse of this would happen. In place of wiping out weaker portions it would seem those more heavily charged with silver deposit would be rapidly assailed, shadow detail appearing to be less acted upon in proportion. In theory this seems wrong and impossible; but try it, and see if as a practical result it does not happen.

One or two such simple tests are more instructive than reams of paper description, for unless your experiments are widely at variance with that of the majority of workers, results will but tend to show what has just been stated comes near to being a self-evident fact. Having made the original negative by one or other means conform to the description already given, it will need to be decided which of two ways is to be followed in making the positive, from which any final enlargement has to be done. Is it to be by contact printing, or shall you enlarge the transparency direct to full size, and so make your positive show everything, both as to size and contents, that it is intended the after prints are to offer for consideration. For reasons needless to dwell upon, this latter method is the one which appears to offer wider opportunity for introducing modifications or alterations by means well known, and widely employed, such as matt varnish, color, lead, and stumping-chalk, for the simple reason that whatever is done the effect produced is seen at once, and each touch of stump, brush, pencil, or scraping-knife tells its story, just as the final result when printed may be expected to present it. This is certainly not the case when the transparencies are made by contact, for of course any work upon it may be expected to show when enlarged up to the full size intended. More especially is this so if the work done is of considerable amount, and the enlargement of fair dimensions, say from quarter-plate to 22 by 18 inches. This trouble may to some extent be overcome if after making the positive and doing to it that amount of retouching which seems called for, another negative by contact be then made from the worked-up transparency.

The new negative is then operated upon in the same manner by pencil or other means and finally another plate exposed behind it, when the resulting positive should be in a condition for proceeding. If, however, it still shows signs of an undesirable character, the same process of working upon the film may be carried out, and then matters should be ready to proceed to the final stage of making the large negative. The above is quite a practical method, but is, after all, to our mind, inferior to that of making the positive full size by enlargement direct at the first stage, and after what may suggest itself as being required has been done to bring it to the right state, then by simple contact printing make the big negative from it.

One trial of this method will clearly show how great is the power it places in one's hands, the only objection of any moment being that of extra

cost in using a large plate in place of a small one for making the transparency upon; but this is really of little importance when balanced by the extent to which faults may be remedied, or improvements introduced. Such is the best plan of going about making an enlarged negative when it is a straightforward matter without having to make introductions from other negatives.

Where skies or other features are to be added, for reasons obvious to photographic workers, it is better to use separate plates, one for sky and for the landscape; then bind the two together, and proceed to make the enlarged negative therefrom; this avoids all difficulty from errors in exposure and development, for if it should happen the landscape portion had received correct exposure, but the sky had not been quite so accurately dealt with, some trouble would follow in getting two parts to develop evenly side by side on one plate, one being finished sooner than the less exposed portion, or just the reverse might happen, one part correctly and the other much over-exposed. In either event it means wasting the correctly exposed portion as well as the incorrect, and for this reason alone it seems better to employ one plate for each section, sky, and landscape, and so obtain each in the right condition for working from afterwards. Many indeed are the modifications this method of working renders possible to be brought about; items strengthened, large or small parts shaded down, troublesome patches, or worrying lights subdued or taken out altogether as may seem desirable. Matt varnish, tracing-cloth or paper, knife, brush, color, lead, or stumping-chalk; each may in turn be used to produce such alterations as appear needful, without fear of trouble arising, when printing is done afterwards, from coarse, grainy streaks, showing where pencil or stump had been at work retouching. The transparency of the positive is of the same size as the final negative is intended to be. It is quite a different story when any amount of work is done on a plate which afterwards has to be enlarged; but this is too obvious to need pointing out. For making exhibition pictures of fairly large dimensions from small original negatives by means of enlarged negatives, and where quality of result rather than cost of mere material used is important, then by all means try making your positive, enlarged straight up to full size, do what work on it is required, then by contact printing make the final negative on either plate or paper as may be convenient.—*British Journal of Photography*.

A HOME-MADE PRINTING PAPER.

BY PROFESSOR RUDOLFO NAMIAS.

NOTWITHSTANDING the many cheap and good printing papers on the market, there are two classes who like occasionally to prepare their own, those to whom economy is an object and those to whom experimenting is a delight and who think that they can make something more suitable than they can buy. For all such we have pleasure in

reproducing from *Photography* the following article by one to whom photographers are already largely indebted, premising that we have found the paper so prepared most excellent, readily giving tones ranging from the deepest black to a fine Bartolozzi red.

The paper which is described below is not entirely novel, as I have written of it some years ago in *Il Progresso Fotografico* and elsewhere. I have lately, however, been giving more attention to it with the idea of finding out the best conditions under which it can be prepared and used, and how the pleasantest tones can be obtained in the most economical manner, and the outcome of these experiments is set forth below.

The sensitive substances employed in this paper are ferric chloride and oxalic acid. The ferric chloride is rapidly reduced to ferrous chloride under the action of light by oxalic acid, which, with the excess of oxalic acid present, gives ferrous oxalate.

We then have ferrous oxalate on those parts of the paper which have been affected by light, and, as everyone knows, this is *par excellence* a reducing body. Its reducing power may be made use of forthwith by immersing the exposed paper in a solution of silver ammonia-nitrate—the silver is immediately reduced.

Now a few words on the most convenient method of working. We first prepare the sensitizing solution by taking a hundred grains of crystallized ferric chloride, fifty grains of oxalic acid, twenty-five grains of hard gelatine, to each ounce of distilled water.

The gelatine, after being allowed to soak in the water which contains the soluble salts, is warmed in a water bath very carefully to the lowest temperature which is sufficient to dissolve the gelatine. The solution is spread by means of a brush on a fairly good well-sized paper. The special qualities of paper made for photographic processes, which are very expensive, are not a necessity for this purpose.

An important point is to dry the paper as quickly as possible by heating it at a stove. In this way the penetration of the sensitizing solution can be prevented. Both the liquid prepared as above and the sensitized paper may be kept without damage for a considerable time, for, while the reaction between the ferric chloride and the oxalic acid may be regarded as exothermic, the great tendency to oxidation of the ferrous salts is opposed to the reduction.

The paper is very rapidly affected by light. Its sensitiveness is such that in bright sunshine with a negative of reasonable intensity a print is obtained in about three minutes. The progress of printing may be watched, the image appearing light upon the yellow background of the paper. A little practice will be wanted in order to make sure that printing is carried to the proper depth.

The paper ought to be developed soon after printing. This is effected by immersing it in a two per cent. solution of silver nitrate, to which has been added sufficient strong ammonia just to cause the precipitate which takes place when the ammonia is first added to be redissolved. In this liquid the image appears almost instantaneously, and after the print has been allowed to remain in it two or three minutes it is taken out and washed. The picture will be seen to be in a vigorous black on a deep yellow

ground. This deep yellow is produced by iron oxide resulting from the action of the ammonia upon the sensitizing coating. After a short washing we may get rid of the iron oxide. This can be done very easily by means of a four or five per cent. solution of oxalic acid. The unexposed portions become quite white. The print is then washed for at least ten minutes to get rid of the acid, and it only remains to fix it in a five or ten per cent. solution of sodium hyposulphite.

The tint finally obtained, which is not very black, is to me a pleasant one. A little warmer tone can be obtained if we employ for fixing a ten per cent. solution of sodium sulphite. I would point out that the only use of the fixing is to get rid of the minute traces of silver which have been absorbed and retained by the paper in consequence of its immersion in the silver nitrate solution. These traces, although very small, cannot be got rid of completely by mere washing in water.

Let us now see what treatment this paper requires in order to obtain various colors, or, at our option, a finer black.

(1) Instead of fixing in plain hyposulphite solution, let us add to the ten per cent. hypo bath a saturated solution of lead acetate, until the white precipitate which first forms is on the point of redissolving. We shall obtain in this way darker tints than with the plain hypo.

(2) We may fix in the solution just described, but with the addition of ten minims of a one per cent. solution of gold chloride to each ounce of the liquid. In this way we shall obtain fine violet blacks.

(3) After the oxalic acid treatment and a very careful washing the image may be toned in a solution containing one grain of gold chloride in each two ounces of water, to which has been added twenty grains of sodium bicarbonate. After toning we can fix in the plain hyposulphite bath or in the hyposulphite with lead acetate above described (No. 1). In this way, according to the time during which we leave the print in the gold solution, we can obtain anything from a warm tone up to a vigorous black with a violet shade, which for some subjects is very effective.

(4) We can also tone the paper with platinum by adding a salt of platinum to the oxalic acid solution which is used to clear the print. Either platinous chloride (potassium chloroplatinite), or platinic chloride may be used. We add one grain of potassium chloroplatinite or of platinic chloride to two ounces of the oxalic acid solution, and in this way quickly obtain very intense and pleasant blacks, which are still further improved if the print is fixed in the No. 2 bath. The chloroplatinite is preferable to the platinic chloride, because it does not reduce the image so much.

I have endeavored to find out some means by which the action of watching the progress of the printing is made more easy. I have succeeded best by adding to the sensitizing solution a small quantity of Prussian blue (ferric ferricyanide) dissolved in a solution of oxalic acid. In this way we get the sensitive surface of a bluish tone, which is bleached by the light (which transforms the ferric ferricyanide into ferrous ferricyanide), which bleaching helps very much in watching the progress of printing.

The process is so economical and easy that it is worth trying both by amateurs and by professionals of an experimenting turn. It may be pointed out that the method can be applied also both to linen and to cotton.

OUR PORTFOLIO.

Prints for criticism, only one at a time and only once each month; to be sent to Dr. John Nicol Thoga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1700. Rev. SIDNEY S. CONGER.—"On the Dunes" is hardly a correct title, the view being really of the ocean with the waves rolling in, although, no doubt, the view point is on a dune, and perhaps more's the pity the dune being far too dark to be anything like true in value.

We, however, say "perhaps," as we are not quite sure that the dark of the dune does not help by contrast to add beauty to the water, and if not, it will be easy in printing to give the necessary lightness to it. This is one of those little pictures that show better enlarged, and in that operation both sky and dune should be rendered in a higher tone.

1701. W. H. BLACAR.—"Mt. Desert" is an excellent example of the "record of fact" phase of photography without any claim to the pictorial. The technique is faultless except, of course, for the dark shade down the middle of the print mentioned in our answers in our last, and for which you have apparently not yet found a remedy. We feel sure that it is caused by some mechanical obstruction to the light after it has passed through the lens. The figures, especially the standing one, are too stiff, wanting in action as if standing to be photographed, and there is not a trace of the atmosphere, so essential in such a subject. Then, the oval masking, although a matter of taste, is less suitable for this than for almost any other subject, crushing, as it does, the most important part into less importance.

1702. H. H. HARVEY.—"The Woodland Path" is too uniformly flat, with such lights as there are scattered all over

the print. The subject is fairly good, and might have been made into a good picture, but the lighting and treatment would have needed to be very different. Try to mass instead of scattering your lights and shadows, and secure sufficient contrast to give life to the picture.

1703. G. A. HOLLY.—"November," a row of corn shocks with one more prominent than the others in the foreground, was hardly worth photographing, and if it was, should have been better done, as it cannot be of the slightest interest to any one but the farmer who raised it. Nor is it good as a record, the shocks being much too dark, probably from insufficient printing, although the negative is probably under developed; and the perspective is far from pleasing from the use of a lens of too short focus which made you go so near the shock on the left as make it a giant compared with those almost immediately behind it. Unless for practice, it is a pity to waste good material on such subjects, plenty of the pictorial being always at hand to those who have learned to see and recognize it.

1704. W. H. STANCHFIELD.—"Sugar-Loaf," an historical landmark known all over the Upper Mississippi Valley, and one that has been photographed times without number, although we doubt whether ever better than in this little picture. We say "picture" advisedly, because while wanting in much that is gen-

erally considered essential to the pictorial it has much that takes it out of the purely "record." The local application of brom-

ide during development has preserved a fine cloudy sky, and, as you say, such use should be better known than it is. The only improvement that we can suggest would have been a greater indication of atmosphere, but as the main object is in the distance, that is hardly advisable. This is another of the few little prints that come that are too good for their size, and that would bear enlargement and tell well when enlarged.

1705. CARL KREBER.—"Abandoned," a canal and canal boat, both apparently in such good order as to make the title inappropriate, is of the record of fact rather than the pictorial, and the point of view, looking straight up, is not so objectionable as it would have been if a picture had been the aim. The arrangement is satisfactory, but there is room for considerable improvement in its reproduction. The water is mostly represented by white paper, while the sky is considerably darker, and appears as if made by separate printing or by painting on the back of the negative and not doing it well. Such dark clouds would certainly have made their impress on the water.

Taking it all in all, the print shows laudable effort after something good, but a lack of previous study and thought. It should never be forgotten that pictures are made before the cap of the lens is removed or the shutter sprung.

1706. JULES A. BOURQUIN.—"Evening" is one of the few pictures that encourages us to persevere in this part of our work; an example of the beauty of simplicity in which little is shown but much suggested; one of those pictures that we see in it just what we bring to it, and in which there is hardly a limit to what may be brought.

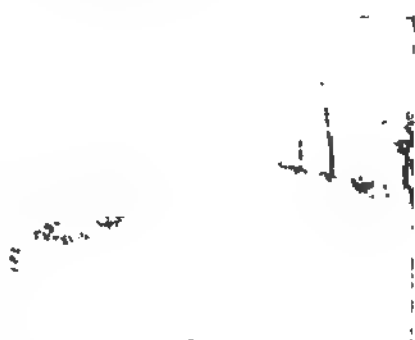
A winding stream with a path by its side and the definition such as to concentrate the attention on a single figure in a boat in just the right place, entering the shadow cast by the mass of foliage on the bank. We hope this was intended, as it is one of the charms of the picture, and adds one more to the many lines of thought suggested. Simple as it is, we can go to it again and again, always finding something new, a text, as it were, for many sermons. (See page 63.)

1707. ERNEST S. HOFF.—"The River" is not a successful photographic effort. A too short exposure has made sky and water, unless under the shadows of the

trees, merely white paper, and both foreground and trees on the left are about as black as the paper could be made. You must either give longer exposures or wait till the light and other conditions are favorable for such snapping.

1708. WALTER D. BROWN.—"Autumn" might have been a good subject from a different point of view, but as arranged here it is far from satisfactory. The three vertical lines, one dividing the print in two, while the other two, the large tree on the left and the smaller one on the right, repeat the margins in a way that spoils the composition. Then, the white sky and equally white water (we suppose it is intended for water) would spoil any picture. The only object that we can think of for the making of such a photograph would be as a test for the lens, and it shows both its covering power and its definition to be satisfactory. Before you can make pictures you must learn how to expose sufficiently to secure a proper tone in your skies and study how to compose or arrange your lines and light in a way that shall be satisfactory. This is a good photograph of the old, old style when needle sharpness and white skies were not only tolerated but nothing else was aimed at.

1709. F. F. SOMBERGER.—"The Road Down the Hill," a wintry view that makes one feel cold to look at it, and yet not altogether satisfactory. The shadows so essential to snow scenes and so



easily secured, as may be seen from an article on another page, are wanting, and consequently the desired contrast that would have given such a charm; but it is a very good picture notwithstanding, and the more we study it the better we like it. But a figure, and a trodden path, what might not be made with them

1710. H. PORTER.—"Pastoral" is hardly a suitable title for this subject, including a stream in the foreground, a building, apparently a home, in the middle distance, and in the distance, judging from the tall chimney, what appears to be a factory. The subject, however, is very much better than the photography, which, from under exposure, is simply a failure. The stream and the sky are merely white paper, while the grassy foreground, at least we suppose it to have been grass, is as black as silver can make paper. True, there are in the sky indications of clouds that might by longer printing have been shown, but that would have made things worse than they are had that been pos-

sible. Then, the absolute want of atmosphere is a serious fault, the distant factory being as sharp and as well defined as the immediate foreground, while the arrangement that brings it into the very center of the composition is also wrong. The subject, however, is fine and with a suitable exposure and the view point taken a little to the left or right you would have had a fine picture. You may take it for granted, however, that an exposure that gives you nothing but black and white can only give results that are intolerable.

1711. W. H. CRAIG.—"Going to Feed the Hogs" is an excellent subject with two faults, one serious, the other fatal. The serious fault is the placing of the objective point of the picture in the distance instead of considerably nearer, and so lessening its importance; and the fatal fault is the under-exposure making both sky and part of the roadway nothing but the intolerable white paper, while most of the foliage is merely undiluted black. With an exposure sufficient to give some-

thing like true values, to render sky and foliage in something like their true luminosities, and the horse and wagon placed in about the middle distance, this would have been one of the pictures of the year. Nor can we understand why you do not see this as well as we do, as surely you cannot suppose that a sky or a road was ever so white as here rendered, or that trees were ever so black. Whatever exposure this got, at least three times as long was necessary to give anything like true values.

1712. OTTO ERNST.—There is really nothing to say about the unnamed print unless it be, as we have often said of such, that it is a subject that would not have been considered worth a plate but for the snow; and the almost unbroken foreground of one-tinted snow does not improve it. It is difficult under any conditions to secure sufficient detail in trees and snow together, but it is much worse when, as here, the trees bulk so largely and have been photographed against the light. For such a scene any other position of the light would have been better than that which sends the shadows straight to the camera.

1713. W. H. LUCKHAUPT.—"Sheep" belongs to the record rather than the pictorial, and but for the false values, would have been very good. The backs of the sheep and the straw, both in pile and scattered on the ground, are far too white, making the contrast with the darker sides of the animals far too great. A longer exposure and shorter development would have given you a much better rendering because the values would have been truer. In record work especially a full exposure is a *sine qua non*.

1714. C. F. CLARKE.—"Across the Bay" is a charming picture, mainly perhaps because of its beautiful cloudland, but largely too in virtue of the way in which the bay and its surroundings have

been managed. The way in which the masses are balanced and contrasted could hardly have been improved, while the placing, both on the right and left, is in every sense satisfactory. (See page 63.)

Still, there is room for improvement. The water of the bay is too uniform in tone, and should have been of a lighter shade immediately under the bright white cloud. Then, think what an improvement

a ripple would have been, as at present we only know that it is water from its surroundings; and there is an entire lack of atmosphere, the distance being quite as well defined as the immediate foreground. But, after all, these hints are more with a view to future work than an intention of finding fault with this, as we already said, it is a charming picture. The others in due course.

SOCIETY NEWS.

Secretaries of Societies, members or others who read papers at the meetings and who desire a wider audience for their communications are requested to communicate with Dr. John Nicol, Tioga Centre, N. Y.

The Chicago Salon.

We have to thank the Secretary of the Chicago Society of Amateur Photographers for a copy of the catalogue of the fourth Chicago Salon, and must congratulate the Salon Committee on having got up one of the most artistic things of the kind that we have as yet seen.

Louis Albert Lamb, one of the jury of selection, has written an excellent introduction in which the influence of the East on the present pictorial status of the West is frankly acknowledged, but at the same time claiming for this fourth Salon that it is "a distinctively Western exhibition," adding, "Note in it the absence of superficiality and mannerism. Observe that it is frankly photographic, yet entirely subservient to the canons of art, obedient to the laws of arrangement in all branches, artistic in purpose, artistic in technique, artistic in *ensemble*—yet truly photographic. No sham at all anywhere, no pretense, no tinsel." We confess to not knowing just to what the latter quotation refers, or with what he is comparing the exhibition, but shall let it pass because of the other good things he says that are worth listening to.

From one of the judges we understand that there were altogether some eight hundred frames submitted and only 188 were found worthy of a place on the walls; and yet, in the opinion of one of the judges, it is not quite up to the standard of the last or third exhibition. This, to some extent at least, may be accounted for by the absence of any of the work of the Photo-Secession, the Salon Committee not being willing or unable to agree to some of the conditions which that body considers necessary to make,

and which, as they exhibit only by invitation, they are quite entitled to do.

While, however, regretting the absence of so many of the well known workers, the Salon is to be congratulated for bringing out a few that are new; one of the best of the eighteen reproductions by which the book is illustrated being "Almost Home," by Irving K. Park of Athens, Pa., his first appearance on the walls of a Salon.

We agree with the author of the introduction in saying that Chicago may now consider the Salon an established custom within its borders, and there is every reason that it should be so. Few photographic societies have such advantages. Intimate connection with the Art Institute of Chicago, the Salon being held under their joint management, rooms with every convenience in the Art Institute Building, and the subscription or "dues" paid to the photographic society making the amateur photographer also a member of the Art Institute. If we have a single reader in Chicago or within a reasonable distance thereof that is not a member, we say at once that he or she is neglecting one of the greatest privileges that a photographer can enjoy.

The catalogue is printed on heavy coated and toned paper giving the reproductions an advantage not possessed by those in catalogues generally, and the selection, on the whole, is satisfactory; although we hardly know what good is to be served by the reproduction of such examples as Carle E. Semon's "Mediæval Head." That, however, may be but a confession that we are not able to bring to it that which more cultured observers see in it.

Taking it all in all, the Chicago Society of Amateur Photographers are to be congratulated on the very decided success of their fourth Salon; the more especially as it warrants us in regarding the Chicago Salon as an established fact, and one that photographic pictorialists throughout this as well as other lands may look to as an annual opportunity of pitting their own work against that of their brethren everywhere.

First International Exhibition of Artistic Photography at the Hague, 1904.

The photoclub (Daguerre) at the Hague intends to hold an international exhibition of artistic photography during the summer 1904, with a view to give as completely as possible an idea of modern art in photography.

The following conditions are to be observed:

1. The photographs must be original, no reproductions.
2. They have to be framed.
3. Number, size and method of printing are free.
4. On the back of each print must be clearly written the title of the photograph, as well as the name and address of the sender, and also the method of printing and the worth of the print as valued by the sender (with regard to insurance).
5. The photographs must be addressed, carriage paid, to "de Regelings-commissie van den Eersten Internationalen Salon van Kunstfotografie, Pulchri Studio," 's-Gravenhage.
- To be duly accepted the photographs must have reached the "Regeling-commissie at the latest on June 1, 1904.
6. Admittance or refusal are decided by a jury (excepting invitation exhibits) composed of Messrs. H. W. Mesdag, painter, the Hague; Ign. Bispinck, president of the Amst. Photo Club, Amsterdam; Dr. H. Henneberg, art. photographer, Vienna; F. Matthies Masuren, painter, Halle a-Saale, together with representatives of France and England, whose names will be published in the future. Works which have not been accepted will be returned to the sender at his costs.
7. A souvenir of the exhibition, in a form which has not yet been decided upon, will be presented to the exhibitors.
8. The committee is not responsible for loss of, or damage to the objects during their transport to and from the Hague.

9. The exhibition is to take place from June 12 to July 24, 1904, in the building of "Pulchri Studio," Lange Voorhout, the Hague.

10. After the close of the exhibition the photographs will be returned to the sender with the greatest possible diligence and at his costs.

For further particulars apply to the secretary, Conradskade 63, the Hague.

Columbia Photographic Society of Philadelphia.

THE NEW "SOLGRAM" COLOR PHOTOGRAPHY.

On the evening of December 28, 1903, Mr. William C. South gave an exhibition and demonstration of his "Solgram" method of producing photographic pictures in colors of nature. The lecture room was filled to overflowing with a representative gathering of photographic workers such as is seldom got together—amateur, professional and scientist—and the interest was intense. The lecture is published in full in the monthly bulletin of the society.

Mr. South started by giving a historical *résumé* of color photography, as a preface to his own work, as follows:

"Mr. President and gentlemen, it gives me pleasure to have the opportunity to talk to you this evening on a subject so dear to my heart as Photography in Colors.

"In order to clear away the mysterious element which keeps the general public from knowing just what to expect in Color Photography, or rather what they desire in such a process, I have decided to divide my subject into two parts; the first part I shall call the Old School or direct method, and the second part I shall call the New School or negative method.

"The Old School or direct method of photography is based upon the inventions and discoveries of Niepce and Daguerre, whereby pictures or photographs were taken direct in camera upon a light, sensitive surface, without the use of a negative. The pictures so produced are positive and are reversed (right is left, etc.). They cannot be reproduced except by repeated camera exposures. The reason is obvious."

Mr. South then reviewed the methods and progress of all the early experimenters, giving special credit to the work of Dr. Zerker and Prof. Lippman, and Messrs. Carey Lea and Louis Ducus du Hauron. He then proceeded to classify

the methods of the old school of workers as follows:

"If we classify the processes of the early workers we will find that we have three distinct methods of approaching the solution of the problem. First, by direct pigmentation by the use of silver chloride. Second, by interference, such as the Lippmann, Becquerel and Niepce processes; and, thirdly, by selective fading, as foreshadowed by Wiener.

"Let me say right here that it is impossible for any one to discover color photography by the direct method, or Old School process, for all the principles have been discovered. But should any one be quoted as doing so, a little search will soon plainly show that what that person really did was to perfect one of the methods already attacked. Thus in the Old School we look for color photography to come from one of the processes mentioned. There is no room for discovery, except possibly an existing chromo sensitive surface, but there is plenty of room for invention to complete these existing processes and give us something permanent and practical.

"However, I believe you will all agree with me that such a process, no matter how simple and beautiful it may be when invented, will not be so desirable as we are led to believe, when we take into consideration that most times duplicates will be impossible, and that, at best, images will be reversed. I, myself, have worked with but slight success in trying to build up a chromo sensitive surface by means of the products of color making bacteria. My greatest stumbling block was to find a means to fix the images so produced. Had I been successful, a portion of the credit due me I should have to turn over to Wiener for his theory, as my process would decidedly belong to the fading-out method.

"To one who has made a study of three-color photography, it will be hard to see how any one can have room to discover anything in this direction: yet there is room for the inventor to simplify matters, and give us a good, practical, permanent process of color photographs on paper, or other opaque support; and to the lucky individual who manages to do so, I must say that part of the glory must go to Louis Ducos du Hauron.

"Now, should he not wish to give the full share of credit to one individual, let him devise a method by which he can

bring about a marriage between some of the processes already invented.

"I might throw out a hint—(devise a method of making permanent aniline dye stuffs)—and I believe the Joly process will give us the required negative and the fading-out process will give us the print. So much for an ideal one negative; one printing process.

"However, with plates sensitive to the whole visible range of the spectrum, it is possible to make the triple negatives at one exposure, by means of one of the new forms of cameras—such as Ives, White's and several others.

"The New Ethylred plate is slightly more sensitive to red than it is to blue or violet, thus making instantaneous tri-color photography possible, as the ratios of exposure through the three filters, namely,—blue, violet, green and orange red, instead of being one for blue, four for green and twelve for red, are one for blue, one and one-half for green and three-fourths for red. Such color value plates being within the reach of every one, and, in fact, everything necessary for color photography except paper to print our results upon, is enough to make any wide-awake photographer think.

"To the amateur, I would say that in the film which is readily orthochromatized, he has a power placed at his disposal which for results cannot be surpassed by any process of picture making, save possibly oil painting (in the hands of a master). That is, if he could get a paper which would record the color values of his negatives in their proper hue.

"Imagine a small camera so arranged that three films could be exposed at one time. Our field work would not be more arduous than it is at the present time. Such cameras exist, and to-night I hope to show you that such a paper has been produced to complete the Tri-color New School of Photography. The name of the process I call the 'Solgram.'"

Mr. South then proceeded to explain how by means of blue, violet, green and orange red filters the negatives could be made, from which positives of the primary colors could be obtained, and showed a set of filters, such as are used in the work of producing mechanical three-color half-tone prints.

Mr. South then showed some tri-chromatic negatives and told of his early experiments in printing on his new paper, from such negatives. He then stated, "I

soon became convinced that the three negatives represented the qualities of the picture—light, shade and color. That the yellow printing negative was the light, the blue printing negative the shade, and the red printing negative the color. My previous artistic training had caused me to recognize that each picture and each natural scene possessed a dominant key, as in music, though the whole might harmonize into a grey, as it were. As all artists and colorists are aware, g-r-a-y is a neutral compound of black and white—light and shadow—while g-r-e-y is a neutral or nearly neutral compound of the three primary colors—red, yellow and blue. In nature or art we seldom see the true neutral grey, but rather a green-grey or a brown-grey, which are shades of yellow or red.

"The red representing the color or body of the picture, I soon conceived the idea that it should be printed first upon the paper; followed next by the blue, or shadow, and finally by the light, or yellow. To demonstrate this, I have here a print made in stripes, red, red and blue, and red, yellow and blue, from portions of the same negative. You will see that the blue gives shadow and detail, but that the yellow gives light and life to the picture.

"The 'Solgram' is made by first printing the red or color in a colloid form and developing the same by means of water. The paper is then dried and coated with the solution for producing the blue print, which is practically colorless when applied, and prints out blue. After again washing and drying, the yellow solution is applied and printed, forming the complete picture."

The process being a printing-out process, is easily controlled, and allows a large latitude for the personal equation, from an artistic point of view.

"The prints are absolutely permanent, even boiling water failing to start them, the red being a colloid compound of *rubia tinctorum*, the blue an iron salt, and the yellow a gum amber in colloid form.

"When I had nearly completed my experiments, I one day accidentally broke the blue negative of a very beautiful set, and rather than lose it completely, thought of trying to print the shadows by a second printing of the red negative, and was successful. This led to the endeavor to do away altogether with the trouble of making three negatives and print from

one only. The process is as follows: Make a print from the negative (which should be upon an orthochromatic plate and preferably made with a green or greenish ray filter), and from this print make, by contact, an under-exposed and over-developed negative, as hard as possible. The original negative fully printed gives the red print, and less strongly printed is used in making the blue print. The new hard negative is used for the yellow. Thus we have a picture made from one negative in the field, the balance being laboratory work. Of course, two negatives could be made in the field, one regular and one under-exposed."

Mr. South showed a pair of negatives and the positive print used in making the second negative.

In conclusion, Mr. South said that practically all that anyone needed to understand color photography was to read the two books he had previously mentioned, "Photography in Color," by R. Child Bailey, and "Hand Book of Color Photography," by Bolas, Talent and Senior, which can be procured from your photo supply dealer or our publishers.

Akron Camera Club's First Annual Salon.

The Akron Camera Club takes pleasure in announcing that its first annual photographic salon will be held at its rooms, corner of Market and Howard streets, Akron, Ohio, from April 4 to 9, 1904.

We cordially invite the submission of pictures for the judgment of the jury of selection, under the following rules:

Any number of pictures may be submitted, but only such as in the opinion of the jury of selection show distinct artistic merit will be hung.

A suitable diploma will be awarded each exhibitor, together with official catalogue of the Salon.

All pictures must be framed, and no accepted picture may be removed before close of exhibition.

Title of each picture, exhibitor's name and address, must be written on label provided, and attached to back. Nothing may appear on front except title and exhibitor's name.

All pictures must be forwarded at owner's risk, carriage prepaid, and delivered at Camera Club rooms not later than March 21, 1904. Return charges to be paid by exhibitor.

GEO. F. KUNZ, Chairman,
CHAS. E. SMITH, Secretary.

Camera Club of New York.

The regular monthly meeting of the club was held on Tuesday evening, January 12, at the rooms, No. 5 West Thirty-first street, in this city, and President Crosby presided.

The secretary reported that the board had authorized the purchase of a Cooper-Hewitt electric light or lamp for the new diapositive room. Two members had been elected, and the secretary proposed new amendments to the by-laws restricting the limits where non-resident members may be located and abolishing the corresponding membership, also amendments admitting painters, sculptors and actors resident in New York to the non-resident class.

It was also stated that the last number of *Camera Notes* was now published.

Mr. H. Snowden Ward of London and editor of the *Photogram*, being present, was invited to say a few words to the club.

He spoke of the changed conditions in England as regards photographic societies and manufacturers and supply houses.

He imagined there might exist about a hundred good working photographic societies. Within the past two years more serious work was being undertaken, and one man in one society had advanced the idea of three clubs joining in getting up separate print exhibits, then combining them and having the work of all three respectively exhibited in each place. It aroused interest and stimulated the members in each organization to be represented. He thought there was a revival in club life going on. Stated that there was a large increase in postal clubs. These generally consisted of a few members who exchanged and criticised each other's work. The work was excellent, as a rule, and if hung on the walls would make a creditable exhibit. Mr. R. Ferguson, representing the Melbourne, Australia, Photographic Society, spoke a few words about the enthusiasm of photographers in that distant country.

They met regularly and were interested in producing pictures of artistic merit besides promoting the art and science.

The lights were then turned out and a few slides by Mr. Ward illustrating "Dickens' Land," made by Mrs. Catharine W. Barnes Ward, were thrown on the screen and entertainingly described by Mr. Ward, for which he was most cor-

dially thanked. Mr. Beebe gave the members a glimpse of his beautiful slides on the screen prior to his departure for the Pacific Coast, where he is about to take up his residence.

He explained how he obtained some peculiar effects in coloring or tinting slides by variations in the developer. Metol seemed to be his preference as a developer.

On the evening of January 20 the Interchange slides of the Frankford and Orange clubs were exhibited at test night.

On Thursday evening, January 21, Mr. Holst, the New York manager of the C. P. Goerz optical works, gave an instructive talk on lenses. By the aid of diagrams on a blackboard he showed the construction of the various forms of lenses, from the single achromatic to the double anastigmat, which contained eight glasses. He showed how each lens affected the light rays, how certain work is possible with any lens, and how the anastigmat is calculated to do all the work that any other lens will, and also work impossible with any other combination. He strongly condemned the tendency to work the modern high class lenses to their full capacity, viz., using a lens of too short focus simply because it would cover the plate sharply at full opening. He also exhibited on the screen slides from negatives which showed at a glance the necessity of using lenses of long focus in portrait work especially, and concluded with a number of interesting views of the Goerz factory and of the laborious and exacting task of lens making. After Mr. Holst's lucid description of the various steps in the making of an anastigmat lens, the most perfect optical instrument we have at present, there was no question in the minds of the audience as to why these lenses should command the highest prices. On the motion of Mr. F. E. Ives, who also introduced Mr. Holtz, he was tendered a hearty vote of thanks for his address.

Tuesday evening, January 26, Prof. D. L. Elmendorf gave an illustrated lecture on "Picturesque Holland" at the Carnegie Lyceum, the proceeds of which were given to the club as a club benefit. It was a most attractive entertainment.

The annual dinner of the club is fixed for February 13, at the New York Athletic Club House.

OUR TABLE.

Books for review and apparatus and material for examination, and report to be sent to Dr. John Nicol, T'oga Centre, N. Y.

CAMERA WORK, No. 5, for January, 1904, is not a whit behind its predecessors either in its illustrations or its reading matter. This may be said to be a Demachy number, and its six examples of that king of Gum-Bichromate work should be an inspiration, not only to would-be workers in that medium, but to all would-be pictorial photographers. Hardly less interesting is Prescott Adamson's well known "Midst Steam and Smoke" or Eugene's equally well known "La Cigale," although neither it nor Demachy's "Struggle" included in his six examples, in any degree lessen our dislike to the *photographic* nude.

Nor is the reading matter, the bulk of it at least, in any way behind. Keiley's article, appreciative of Demachy and his work, is both instructive and inspiring; Sadakichi Hartmann gives us two of his usual mystical elaborations, which, although they sometimes bring a smile, contain something worth looking for, while F. H. Evans has a lot of "Odds and ends" unusually instructive. Hinton writes encouragingly for those who, like ourselves, think technique an important aid to the pictorial, but it is one of the greatest puzzles that we have come across to understand how room *could* have been found for the article by Harry C. Rubincam. Nothing more absurd or more foreign to the genius of *Camera Work* could have been written. But perhaps the writer never heard of Abney, Meldola, Hardwich, Taylor, Robinson, Burton, or other of the hundred and one who have each and all together made photography what it is.

The position of the Photo-Secession in relation to the St. Louis Exposition, we learn from this number, is still "nothing doing," the pictorialists, fighting for a principle, will not be satisfied with what we described as a promise with a string tied to it; nor do they ask for much. They say, "The Photo-Secession demands but the guarantee of space for one single print in the Arts Building, it being immaterial whose picture secures the recognition for which it is fighting. This has been the ultimatum sent to the St. Louis authorities in reply to their last request to the Photo-Secession."

THE BAUSCH & LOMB LENS SOUVENIR.

We have to thank Messrs. Bausch & Lomb for a copy of this peculiarly interesting collection of photographs which received awards in their "Three Thousand Dollar Century Competition," the judges being Rudolf Eickmeyer, Jr., C. Yarnall Abbot and William F. James. It is being sold for twenty-five cents, and as an inspiration for would-be pictorial photographers it is simply invaluable. Nor is it altogether confined to the photographs, as there are a dozen brief articles, each written by one who knows well whereof he or she writes, that cannot fail to assist the photographer who would follow in their successful path.

As a help in our plea for the making of small pictures for enlargement, we should like to record the fact that the picture to which the first prize, the "Grand" prize of \$100 was awarded, "The Street, Winter," by Alfred Stieglitz, was enlarged from a 4x5 negative; and this is what one of the judges has to say of it in the "Introductory." "A print from the original 4x5 negative, save for its tonal quality, was not altogether impressive, but in the enlargement it showed beautiful detail and remarkable differentiation in its planes, unfolding artistic qualities which were not vigorous enough to impress one in the original, but which were imprinted indelibly nevertheless in the negative, through the action of a good lens." The lens, we may add, was a Bausch & Lomb Extra Rapid Universal.

Speaking of lenses, we may say that the sixty prints in the Souvenir were taken by nine different lenses, the rapid rectilinear leading with 18, followed by the convertible Protar with 14. Next comes the plastigmat with only 9, at which we are a little surprised, knowing as we do the exquisite work of which it is capable, both in its double and single form. The rapid universal is credited with 7, the single lens with 2, and the Zeiss convertible and Protar with telephoto attachment with one each.

Amongst those who carefully examine the photographs there will be differences of opinion as to the work of the judges, and not a few will wonder why

some of the prints are there; although even the least worthy will have their use, they will be an encouragement to not a few doubting ones in regard to future competitions.

* * *

THE PHOTO-MINIATURE, No. 56.—“The Hurter & Driffield System.” This *should* be one of the most useful of this pre-eminently useful series of monographs, but those who know photographers as we do will have their doubts. One of the greatest needs of photography is a method of speed testing and speed marking that would be both uniform and universal. Many methods have been recommended and many are in use, but none are altogether satisfactory or are ever likely to become general; not altogether because of their faults, but also because of the jealousy between the plate makers. Of all the methods that have been proposed that of Hurter & Driffield is far and away the best, its only fault or shortcomings, so far as we can see, is the want of a standard light, a light that shall be as near as possible to that of the sun, that can be produced anywhere, and that shall be always the same.

When Hurter & Driffield first published their classical research, now many years ago, and indicated their system of speed marking, it created considerable discussion and met with much opposition, partly because it was not thoroughly understood, and partly because of ignorant prejudice on the part of photographers; and although subsequent publications have made the system easier to understand and the prejudice begotten of ignorance has largely abated, the men who employ it at the present time might be counted on the fingers of one hand.

Briefly stated, Hurter & Driffield set before themselves the problem of how to obtain perfect technique by scientific means rather than an approximation thereto through rule-of-thumb empiricism, and they succeeded admirably. Having read almost all that has been written on the subject we are in a position to say that in this monograph we have not only a collation of all that is necessary, but instructions for the practice of the system more clearly stated than ever before, mainly because free from the mathematical considerations thought necessary in the earlier publications.

The Photo-Miniature No. 56 should be carefully studied by every photographer

and especially by every plate maker, and if the latter could be induced to adopt and mark their plates by it, one of the greatest steps towards the golden age of photography would have been taken.

* * *

MORE LIGHT IN NEGATIVE MAKING, FOURTH BOOK.—This is the fourth of what is to be a series of five “Books,” of about forty pages each, and as it is by Professor Cook of the Illinois College of Photography, it is naturally, as he says, “discussed from a business standpoint.”

This fourth book deals with “Negative Manipulation,” including intensification, reduction, and after treatment of faulty negatives; all dealt with in a way that gives ample evidence of its being the outcome of a large experience.

* * *

THE JOURNAL OF APPLIED MICROSCOPY, etc., for September, comes rather late in the day, but is none the less welcome for that, this number being peculiarly interesting because of a sheet containing eighty-two portraits, said to be of its editorial staff and collaborators therewith. Eighty-two educationists (judging from the articles in the journal they are mostly so) all in a row, or rather in several rows, is worth studying. Eighty-two scientists and not one bald head amongst them, and only two with anything like an approach to it. That this could not be found in the same class in any other country shows at least that here the young men have a better chance than there; and it may show also that they make more rapid progress in the preparation for their life work. There are only two women in the group, and personally we are sorry even for that small number. This is neither the time nor the place to say just what we should like on that subject, although it may be summed up in a few words. There is no sadder sight than to see a woman step down from the lofty pedestal on which nature has placed her and leave the high and holy work that she alone can do and in the doing of which every moment of her time should be occupied, to engage in work that is of incomparably less importance and which men can do at least as well. Bad, inconceivably bad, will it be for any nation in which the individual rather than the family becomes the Unit.

To those of our readers who are druggists as well as dealers in photographic material we strongly recommend the *Journal of Applied Microscopy*, in which

they will find much to interest them, the article on Pharmacognosy in this number being a fair example; although it may be a surprise to some that for some purposes a drawing by the *camera lucida* is preferred to a photomicrograph.

* * *

THE ILLINOIS COLLEGE OF PHOTOGRAPHY.—“The cry is still they come, the January, 1904, class being larger than any one hitherto, and from *With The Camera* we can gather that both students and faculty are thoroughly satisfied with the work and the facilities therefor.

The photo-engraving department is already in full swing, with every prospect of a great success, additional dark room accommodation having been found necessary, although the plant has been in use for only a few weeks. One of the pleasant features of the College is the frequent return of so many of the students either merely for a visit or to get some additional information anent some particular feature of their work, and the principal and his coadjutors are always glad to see them. One of the best and most convincing proofs of the success of the College is the fact that they have just sent out some thirty thousand circulars stating that after March 1 the price of life scholarship will be advanced to \$300.

* * *

FROM C. P. GOERZ OPTICAL WORKS, New York, comes a new catalogue of Goerz lenses, by far the most complete and elaborate lens catalogue ever issued by any single manufacturer. It bears evidence of laborious work and great care in compiling, and only needed better work on the part of the printer to make it perfect. There is a mass of useful information and handy reference tables, in addition to the full description of Goerz lenses, and we advise all those who contemplate the purchase of a better lens to procure a copy.

* * *

In our advertising pages this month is shown a Focusing Magnifier designed to examine the image formed at the back of the camera. It draws out for use like a telescope, closes for compactness, and is provided with a screw adjustment to suit the user's eyesight. This magnifier, listed at \$2.50, is made by Taylor, Taylor & Hobson, and shows the same beauty of workmanship and convenience in handling so noticeable in the Cooke anastigmats of this firm.

Camera Factory Crippled.

A fire of serious consequence occurred in our factory during the evening of January 18, 1904, destroying all cameras completed and in course of construction and also involving the loss of a large quantity of other apparatus and supplies. The camera department is affected chiefly, and at present we are unable to anticipate the date when we will be prepared to fill orders. Work will be resumed with all possible despatch and we deeply regret that our misfortune must inconvenience our friends for an indefinite period.

The optical department are intact and in a few days we will be enabled to execute orders for lenses, microscopes, binoculars, etc., without delay.

We request the kind indulgence of our customers with orders unfilled, for repairs or other transactions uncompleted, and will endeavor to attend to such as promptly as circumstances will allow.

Yours sincerely,

GUNDLACH-MANHATTAN OPTICAL CO.

U. Nehring Sells His Store.

The photographic retail and mail order business formerly conducted by U. Nehring at 16 East Forty-second street, New York, has been purchased by Henry Herbert and John B. Lindemann. These gentlemen have a wide circle of acquaintances in the photographic field and we trust that they will meet with deserved success.

Mr. Nehring has associated himself with the United States Optical Co. in the strictly wholesale manufacture of cameras and lenses. They will also manufacture the Stark Moving Portrait Lens, a new device which opens up great possibilities in portraiture and for which they have already booked many orders.

Having noticed some published statements regarding Mr. Nehring, we feel it our duty to refute what is base calumny. Toward the close of last year a correspondent sent a letter for publication to all the photographic press in which he claimed that not having received goods as ordered, he had returned them, but could not get his money refunded. We immediately investigated the complaint and give the facts in the case. Mr. A. of Columbus, Ohio, remitted \$8 for a certain lot in a bargain list. This lot having been meanwhile sold, a substitute was sent on trial, the same being returned as unsatisfactory, with the demand that the

money be refunded. This was done, but through a clerical error the check was inserted in the envelope of Mr. X. of Lawrence, Kansas. Receiving a letter stating "check enclosed," but no check, Mr. A. writes to the press of his grievance. Meanwhile the missing check turns up, is re-forwarded to Mr. A. and duly cashed

by him, three weeks after it was issued. Mr. Nehring allowed us to go through his files, and the tone of the letters therein and re-orders from satisfied customers, together with the unavoidable nature of the incident in question, prompts us to make public this explanation as a matter of justice.

ANSWERS TO CORRESPONDENTS

Questions for answer, matter for publication, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

Improving Negatives for Printing.

T. C. WALKER.—A little consideration will show that there cannot be "any method of painting the dense portions of a negative on the glass side, which will render them more translucent in printing, and practically take the place of local reduction." Anything "painted" over the dense parts would, of course, increase the density, but it is possible to paint over the darker parts so as to increase the time required to print them and so give time for the light to penetrate the denser parts. The best way is to coat the whole of the plate on the back with a yellowish varnish and scrape away the varnish from the denser parts. The greater the contrast in the negative to be treated, the stronger the tinting of the varnish; but that is a matter that can only be learned by experience. Almost any varnish will do, with anything that will give it a yellowish color, but the following answers admirably, is easily applied, and easily scraped away:

Gum Dammar.....	1 ounce.
Alcohol	2 "
Benzol	10 "

Dissolve the gum in the alcohol and add the benzol. Let it settle till bright, and pour off as much as may be wanted for a plate and color it to the desired shade with an alcoholic solution of any of the well known yellows; any of the so-called coal tar colors, or if they are not come-at-able, turmeric will answer as well as anything else.

Trimming Wet Prints.

R. WILSON.—With such a number of prints as you are turning out, trimming should be done before the toning and fixing; but as you *must* trim while they are wet, the best way will be to lay them on a sheet of glass or zinc and use the knife as if they were dry. But, as you

have discovered, something more is necessary, and the best thing is to cover them with the "grease-proof" translucent paper generally used by grocers to wrap pounds of butter. Pieces of this the size of the prints are laid on the top, rubbed down smooth, and the knife and straight-edge applied in the usual way.

(Mrs.) W. S. ROBERTS.—Yes, pyro and ortol may be mixed. Thanks for appreciative words, we always try to deserve them.

Focal Aperture of Lenses.

VERITAS.—The "Definition" scale has not, so far as we know, been adopted by any of the camera makers in this country, but is to be found on the cameras of several of the well known British makers. The U. S. method of stop marking was a mistake at the time of its introduction and is a greater mistake now when lenses of wider aperture than was dreamed of then have been brought into almost universal use. We have no doubt that the makers of the volute shutter will mark one for you with the focal fractions on request; we know that they so mark the shutters being fitted into the Cooke lenses.

Testing Shutter Speeds.

LE ROY.—Yes, the method of testing shutter speed referred to is one of the best and simplest; but why go to the trouble of making a scale, etc., when you can get the thing better and complete from the Carter Ink Company, "Pickering's Speed Tester," for half a dollar?

Blackening Brass Diaphragms.

L. F. BURTON.—To blacken the brass stops you propose to make dissolve four parts each of silver and copper nitrate in twenty parts of water. Clean the brass thoroughly, preferably in a pickle of sulphuric acid one in twenty, and soak it

in the solution for ten minutes. Then dry and heat in the flame of a lamp till thoroughly black. But we should advise you to make them of "ebonite" or hard rubber, getting a piece just a shade thicker than the stop slot. Make the openings a shade smaller than the intended size with a brace and bit, and bringing them up to size with a counter sink bit. Lastly rub down to size of slot with emery which will at the same time dull the surface. Such stops may be carried in the pocket without injury, and are in every way better than brass.

C. VAN NOSTRAN.—(1) The ounces you get from your dealer are always 437.5, but in the formula mentioned it is not of the slightest consequence, a few grains out or in can make no possible difference. (2) Not one in a thousand uses distilled water for any solution except where silver nitrate is included; but for the developer it is an advantage to use boiled water to expel the included oxygen. (3) Our favorite at present is edinol, and with only sodium carbonate and acetone sulphite, bromide we rarely use in any formula. (4) For purely landscape work where speed is not an object the only really important feature of a lens is its focal length, and we rarely use anything but a single lens, at present one of the elements of our plastigmat, and it would be impossible to find anything better. We do not know the camera you name, but it is merely a matter of taste, the only essential qualities are a long enough draw, a swing back and rising front, and that it shall be light tight.

Distance of Bromide Paper from Light.

W. L. SLIGHT.—No, the results are not quite the same. It is true that the exposure of the bromide paper of twenty seconds at one foot from the light should be the same as with eighty at two feet, but it is different with different classes of negatives. Dense negatives are decidedly better with the stronger, while those that are weak are much finer in color with the weaker light.

Rules of Camera Clubs.

GEO. MCARTHUR.—We have mailed a copy of the rules of the Athens Camera Club, the only set of which at present we have a copy, and may say that the fewer rules and regulations you have the better. One of the oldest and most successful photographic societies in existence never had either rules or regulations, but like the British Constitution, was a thing of

precedent, the president for the time being and the secretary making the precedents as they found it necessary. To give you an idea of how the thing wrought we may say that, members being admitted by ballot, the balloting for a certain candidate, one of the most respectable men in the city and holding one of the highest positions, resulted in black balls sufficient to exclude him. The president, feeling that his exclusion would be a disgrace to the society, made a speech and insisted on another ballot. That, and a third, showed the same result; when the president, after a third speech in which he insisted on still another ballot, declaring that in the event of that still failing he should declare open voting. The fourth ballot did not contain one black ball and the gentleman thus admitted proved one of the most useful members for many years.

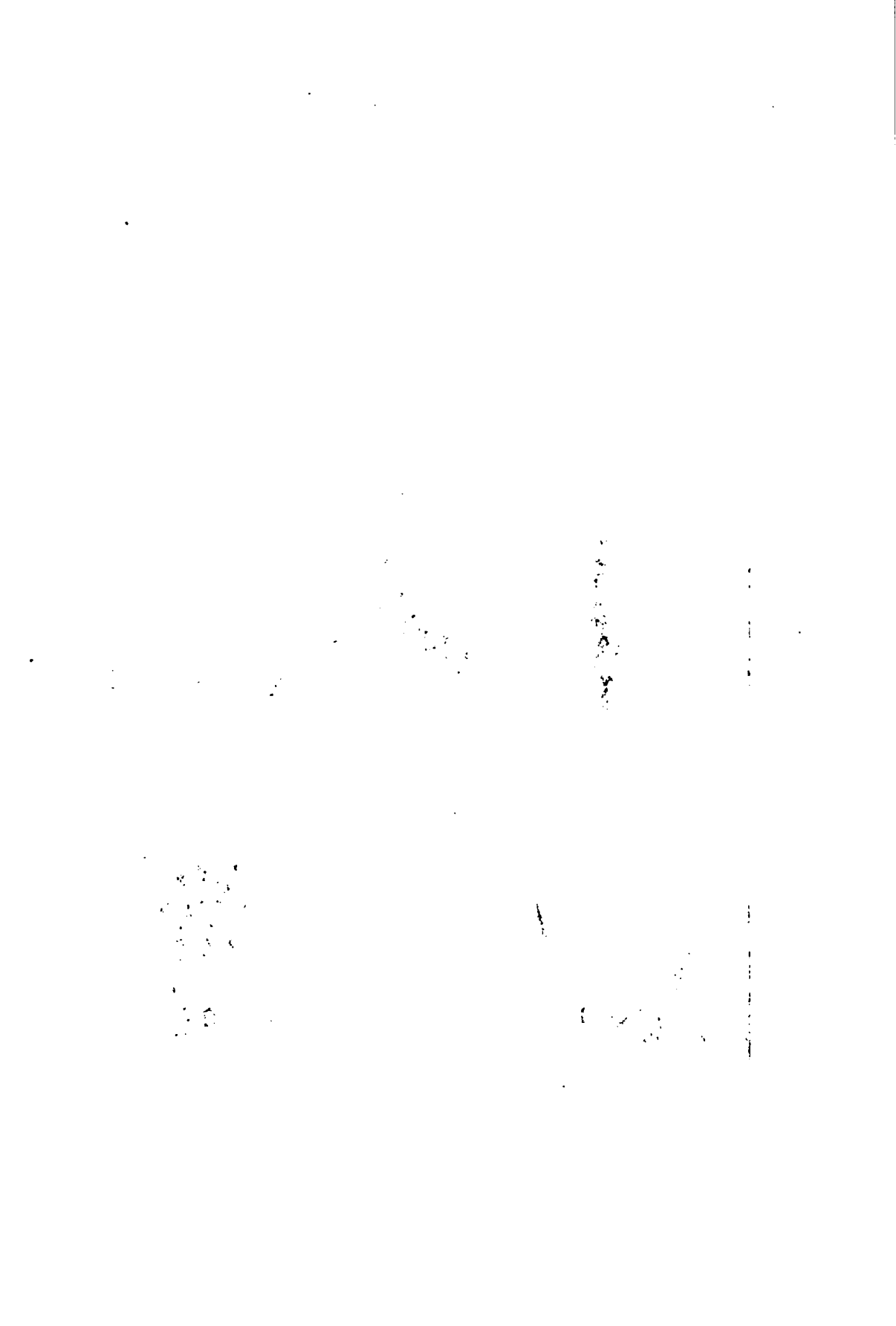
Choice of Camera and Lens.

F. W. MORRISON.—For your purpose we should decidedly recommend a 4x5 camera and an anastigmat, keeping the subject well within the size of the plate and making the negatives, both as regards exposure and development, with a view to enlargement. We should aim at perfect technique in the small negative, trusting to get what we wanted in the art direction both in the enlarged negative and the printing.

BERT HOGUE.—The "Iodized collodion" has become colored through the decomposition of the iodizing salt, and is not suited for use in carbon printing. What you want is "plain collodion," sometimes sold as "enamelling collodion." LePage's glue will answer admirably for mounting by simply coating around the edges, and will have no injurious effect on the prints. We should thin it down considerably, however, before so using it.

Focal Fractions Again.

PRO BONO PUBLICO.—If your lens is symmetrical, that is, if both the front and back elements are alike, each will be about double the length of the combination, and with either of them each stage of the iris diaphragm will have half its value, f-8 becoming f-16; f-16, f-32, and so on; and each, with a single lens requiring just four times the exposure that it required with the combination. The U. S. numbers are a nuisance, and it would be well worth the trouble to have your shutter marked with the focal fractions.



"THE HAND OF MAN."

(Carnegie Art Galleries.)

By Alfred Stieglitz.

THE
AMERICAN AMATEUR PHOTOGRAPHER.

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NO 3.

DEVELOPING IN THE DARK.

A Plea for Intelligent Manipulation.

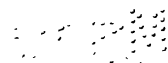
ONE of the greatest of the many puzzles in connection with the practice of photography is why so many of more than average intelligence, and whose "want to know" has resulted in a more than average acquaintance with things in general and an intimate knowledge of most that more particularly concerns themselves, are content to go through all their photographic operations with as little knowledge of the qualities and quantities of the material as has the postman of the contents of the letters he brings to their doors?

Nor is this ignorance confined to developing and the material employed therein, but it extends to everything included in all the various solutions employed; although the exigency of space prevents our, at present, dealing with more than the developing material.

From a pretty extensive intercourse amongst photographers, or at least camera carriers, we are safe in saying that at least fifty per cent. of them know absolutely nothing more about the developing material they use than that it comes in one bottle to be diluted with so much water, in two bottles which for some, to them, unknown rea-

son are sometimes mixed in different proportions, or in one or two powders to be dissolved in water when required, and as often as not they go from friend to friend to find the cause of the black spots arising from plates having been placed in the solution before the powder was all dissolved. More than half of the remaining fifty per cent. make up their own solutions, but as most of them use the formula given by the makers of the plates they use, they take so much of this and so much of that in the prescribed quantity of water, never giving a thought, and indeed seeing no reason for giving a thought to how it pans out; and such may have used the same formula for years without being able to tell how many grains of the reducer or of anything else there is per ounce of the developer.

For this state of matters the dealers and plate makers are mainly to blame. The dealer knows that the easier he can make photography the more cameras he will sell, and finds the putting up of "ready made" developers a profitable occupation; while the plate maker, for reasons not easily discovered, followed suit, or rather led in the



van, the dry plate coming before and bringing with it the popularity. Whatever be the cause, the fact remains that with the advent of the gelatino-bromide plate came what, for want of a better name, may be called the slumping of developing formulæ; the "A and B" or the "No. 1 and 2" solutions, either ready for use when mixed in equal parts or with so much water added; and so arranged that only by a mathematical calculation could the photographer learn the relative proportions of the various ingredients to each other and to the water employed. While it is possible that such calculations were sometimes made we have never met a photographer who had done so, and we have asked hundreds; the invariable reply being that they used Carbutt's, Cramer's, Seed's or that of some other plate maker.

As we have said, this state of matters came in with the gelatino-bromide plate, as previous to that time formulæ were always given in such a way as to enable the photographer to see at a glance the relative proportions of every article that entered into them; generally the number of grains per ounce; or, what we consider still better, in parts. And it makes a mighty difference. All the difference between groping in the dark and working in broad daylight; the difference between knowledge and ignorance, or between hoping for success and knowing how to bring it. But convenient and satisfactory as the per ounce method is, we very much prefer formulæ in "Parts," although, strange as it may seem, we have several times been asked what or

how much is a part. One unit in any kind of calculation is always simpler than where there are several, and a part stands for anything depending on the ultimate quantity required from grains and minims up to pounds and gallons.

To the amateur who takes to photography for the pleasure it gives; to know what he is doing should be especially interesting, as however much he may enjoy the almost creative like appearance of the image in the developing solution, the pleasure will be ten times greater if, instead of "trusting to Providence," *i. e.* hoping it will *come* all right, he knows the proportions and properties of each of the constituents of the developer and *feels* that he can control and modify them so as to *bring* it out all right and as he wants it.

But it is sometimes easier to recognize an evil than to find a remedy. Individual plate makers can hardly be expected to make the desirable change, business jealousy having long prevented a united agreement on several even more desirable changes in their methods. One especially is much to be desired; an agreement on a light which should be a standard for the speeding of their plates, and a National system of speed marking. For those and other improvements we shall have to wait for "a more convenient season," but we have faith in its coming. Some day we shall have a convention of plate makers and others connected therewith or interested therein, at which a few more steps shall be taken towards America's Golden Age of photography.

Portrait of
SADAKICHI HARTMAN. (Carnegie Art Galleries.) By Tom Harris.

A PLEA FOR STRAIGHT PHOTOGRAPHY.

BY SADAKICHI HARTMAN.

Written after a visit to the Photo-Secession Exhibition at the Carnegie Institute, Pittsburg, Pa.

THE exhibition of the Photo-Secession, which opened on Saturday, February 6, at the Art Galleries of the Carnegie Institute, Pittsburg, Pa., affords a most unique opportunity of comparing the styles and methods of applying photography to artistic ends. It consists of about three

hundred prints, contributed by fifty-four exhibitors.

The average merit of this collection is distinctly in advance of all its predecessors. It has eclipsed the Chicago and Philadelphia Salons of 1898-1901, the exhibition at the National Arts Club, New York, in 1902, and the re-

cent Photo-Secession show at the Corcoran Art Gallery, Washington, not only in number but also in excellence of workmanship, and may be safely described as the most interesting and most representative exhibition of pictorial photography which has ever been held. The jury consisted of Messrs. Alfred Stieglitz, Joseph T. Keiley and Edouard J. Steichen, who also supervised the hanging.

As was to be expected of an exhibition, selected and arranged by three pictorial extremists, who lay more stress on "individual expression" than on any other quality, the majority of pictures showed a certain sameness in quality and idea, as well as in the character of the mounting and framing. And yet, at least three-fourths of the exhibits gave evidence of personal artistic intention, and clearly and unmistakably reflected the taste, the preferences, and the imagination of the individual maker.

It is only a general tendency towards the mysterious and bizarre which these workers have in common; they like to suppress all outlines and details and lose them in delicate shadows, so that their meaning and intention become hard to discover. They not only make use of every appliance and process known to the photographer's art, but without the slightest hesitation, as Steichen in his "Moonrise" and "The Portrait of a Young Man," and Frank Eugene in his "Song of the Lily," overstep all legitimate boundaries and deliberately mix up photography with the technical devices of painting and

the graphic arts. Both men are guilty of having painted, more than once, entire backgrounds into their pictures. Steichen's highlights are nearly all put in artificially, and Eugene invariably daubs paint and etches on his negatives to realize artistic shadows. There is hardly an exhibitor, photo-secessionist or not, who does not practice the trickeries of elimination, generalization, accentuation or augmentation, and many of them, who have not the faintest idea of drawing or painting, do it in a very awkward and amateurish way. But the striving after picture-like qualities and effects is the order of the day, and throughout the pictures hung—although practically nothing wantonly eccentric or repellant in its artificiality had been admitted—there was hardly one which was not influenced by the prevailing clamor for high art. Even in their titles they try to carry out this idea. Why, for instance, did Yarnall Abbott call his nude with a background of trees (almost commonplace in treatment) "Waldweben"? What has a meaningless pictorial fragment to do with Wagner's realistic tone-picture? Are such proceedings not slightly misleading and somewhat pretentious?

And yet nobody can deny that their work, as a whole, is the outcome of intelligent and consistent effort. Grace and subtlety and a fair share of imagination it possesses without doubt, and its exponents put so much enthusiasm into their work that its very earnestness compels respect, even if it does not always command admiration. But the question (or rather the problem) is whether such pictorial work still belongs to the domain of photography. Are those people not doing injustice to a beautiful method of graphic expression, and at times debasing its powers,

Portrait of
LENBACH

Carnegie Art Galleries.)

Eduard J. Steichen.

which sixty years of photographic research and progress have established?

This is very difficult to answer. It depends entirely on circumstances and on the spirit in which one approaches such a picture. Should I for instance visit a rich man's art gallery and somewhere on the walls run across Steichen's "Lenbach" in which a number of lines have been etched, several high lights accentuated and half tones painted in by brush, or "A Charcoal Effect" by Mary Devens, it would probably affect me with a special and unique expression of pleasure, and I would care little and very likely not even notice whether it were a monotype, a charcoal drawing, an etching or a photographic print. But when I go into an exhibition of photographs and encounter the very same prints, the situation is changed. I at once ask myself: What sort of photography is it? How is it made? Why does this part look like a hand painted monotype, and that one like an etching or a charcoal drawing? Is it still photography, or is it merely an imitation of something else? And if it is the latter, what is its æsthetic value?

Surely every medium of artistic expression has its limitations. We expect an etching to look like an etching, and a lithograph to look like a lithograph, why then should not a photographic print look like a photographic print? Etching, true enough, is capable of imitating other arts, and a clever etcher might produce an etching which is like an engraving, and another which is like a mezzotint, and a third which is almost like a black and white wash drawing. But if we saw nothing else but the imitations—and we rarely see them and never by master etchers

like Jacque, Appian, Veyresset, Mer-yon and Whistler—we might be inclined to say, "Well, this is really very wonderful, but now suppose the etcher would imitate an etching!" As the etching needle is the great expressional instrument for sketchy line work, so legitimate photographic methods are the great expressional instrument for a straightforward depiction of the pictorial beauties of life and nature, and to abandon its superiorities in order to aim at the technical qualities of other arts is unwise, because the loss is surely greater than the gain.

By "a straightforward depiction of the pictorial beauties of life and nature" I mean work like Stieglitz's "Scurrying Homewards," "Winter on Fifth Avenue," "The Net Mender," etc., or his recent "The Hand of Man." "They also have been manipulated," the Photo-Secessionists will argue. Yes, I know he has eliminated several logs of wood that were lying near the sidewalk when he took the snapshot of his "Winter on Fifth Avenue," took out a rope that disturbed the foreground in his "Scurrying Homewards," lightened the sky in "The Net Mender," and darkened the rails in "The Hand of Man." Why not? Surely that is permissible, as it is really nothing but the old-fashioned retouching. If "dodging" is wrong, then also Fickemeyer, and nearly all pictorial photographers, have to be condemned. "But if you allow elimination, why do you object to accentuation, do not all retouchers accentuate their highlights? Sure enough, but only where it is indicated on the negative and not wilfully, wherever it happens to look well. The whole pictorial effect of a photographic print should be gained by photographic technique, pure and simple, and not merely a part of it. It is surely not legitimate to let the camera do the most difficult part, for instance the reproduction of a figure, and then

"BLESSED ART THOU
AMONG WOMEN."

Gertrude Knebler.

(Carnegie Art Galleries.)

after embellishing it with a few brush strokes or engraved lines (a comparatively easy task for a man used to painting) claim that it is all done by photography. Surely a figure can be placed and surrounded so artistically—just as nature at times composes itself so beautifully—that the result would be a picture which would even satisfy a secession jury, and necessitate no faking devices.

The strictly straight prints of these pictorial extremists, like the "Theobald Chartran" and "Solitude" of Steichen, the "Portrait of Miss Jones" of Eugene prove it. They are just as beautiful as their other work, why then not make all in the same manner? It would be more difficult. But these men are all in other respects so painstaking and conscientious, why not also in their attitude towards photography itself, whose interests they wish to further. I fear they will never "compel the recognition of pictorial photography, not as a handmaiden of art, but as a distinctive medium of individual expression" so long as they borrow as freely from other arts as they do at present. Photography must be absolutely independent and rely on its own strength in order to acquire that high position which the Secessionists claim for her.

But all preaching is in vain, and judging from the present condition of things, it will take years before this latest phase of pictorial photography will be replaced by a more normal one, as it will render necessary a total readjustment of the ideas as to what art photography really is.

It may be interesting to investigate how this change in photographic taste evolved. At the start it was merely the outcome of a revolt from the conventional photographic rendering of sharp detail and harsh contrasts. This was refreshing, as the old-fashioned work had but little claim to beauty and none whatever to art. Stieglitz.

Eickemeyer, Dumont, at that time did some remarkable work. Then some new technical methods were introduced which completely revolutionized photographic work. The first was the gum process introduced by Demachy and carried to its utmost possible limit by Steichen, the second was the glycerine process, as practised by Keiley, and the third the manipulation of the plate, the so-called process of photo-etching invented by Eugene. It is difficult to state which of the three processes has done the most mischief. In the meanwhile Alfred Stieglitz, who had become the champion of artistic photography in America, continually clamored for more "individual expression." And as "individual expression" in straight photography is extremely difficult to attain, the artistic photographer began to imitate the artist. "Individual expression" became synonymous with "painter-like expression," and as the three processes mentioned facilitated their efforts in that direction, they were adopted by all the camera workers of the new movement. Alfred Stieglitz suddenly saw himself surrounded by a lot of men and women who professed to be artists in their life as well as in their work. The final results were the foundation of the Photo-Secession Society in 1902, and the exhibition at the Carnegie Institute, Pittsburg.

In the various groups exhibited one could clearly trace the evolution of the movement. It began with Eickemeyer; then followed in rapid succession Gertrude Käsebier (an expert in dodging processes), F. Holland Day, Clarence H. White, Eugene, Keiley, and finally Steichen and Alvin Langdon Coburn. Although Stieglitz reflects all the different phases, strange to say he remained a straight photographer in all his work.

All the other artistic photographers could not resist the temptation of try-

BARTHOLOMÉ
French Sculptor.

(Carnegie Art Galleries.)

By E. J. Steichen.

ing themselves in gum and glycerine or applying the Eugene-Steichen method of augmentation. It became the fashion to blur objects, and the so-called "cult of the spoilt print" set in. The results were often far from being satisfactory, largely because the majority of the workers could boast of no art training, and had no skill in the handling of brush and etching tools. The fun that was everywhere poked at the "fuzzy print" was not quite unjustified.

Of course no critic has the right to be absolutely positive that the work which he fancies is absolutely the only work that is in the right vein, and that everything else and everyone else is only working and studying in order to make him laugh and have fun. He must be able to think independently of any tradition, of any set idea of what is right and wrong, and be ready to try and understand what the photographic workers have to say.

The glycerine development, especially when employed with mercury, is full of possibilities. It has qualities entirely its own and need not borrow by imitation, but why need it be invariably utilized for fuzzy effects. Why do they obstinately insist on carrying mediums farther than they go?

Yet I cannot deny that I have also seen very beautiful, convincing as well as self-explanatory specimens in this line of work. The Pittsburg Exhibition was in many respects a revelation to me, and I would be the last to discredit the merits of enthusiastic workers as John G. Bullock, Rose Clark, Mary Devens, Wm. B. Dyer, Herbert S. French, Mary M. Russel, Eva Watson, H. Schutze, Edmund Stirling, S. L. Willard, etc., but I claim and am absolutely convinced that still greater triumphs can be achieved in straight photography, and that they have been achieved by these workers whenever they applied the simple methods of straight or almost straight

photography. It hurts me to see gifted persons like Gertrude Käsebier and Coburn, for instance, waste their talents on methods that have no justification to exist, and that have—mark my word—no permanent value and no future. The more so as they all can work straight, and are at their best when they work straight.

"And what do I call straight photography," they may ask, "can you define it?" Well, that's easy enough. Rely on your camera, on your eye, on your good taste and your knowledge of composition, consider every fluctuation of color, light and shade, study lines and values and space division, patiently wait until the scene or object of your pictured vision reveals itself in its supremest moment of beauty, in short, compose the picture which you intend to take so well that the negative will be absolutely perfect and in need of no or but slight manipulation. I do not object to retouching, dodging or accentuation as long as they do not interfere with the natural qualities of photographic technique. Brush marks and lines, on the other hand, are not natural to photography, and I object and always will object to the use of the brush, to finger daubs, to scrawling, scratching and scribbling on the plate, and to the gum and glycerine process, if they are used for nothing else but producing blurred effects.

Do not mistake my words. I do not want the photographic worker to cling to prescribed methods and academic standards. I do not want him to be less artistic than he is to-day, on the contrary I want him to be *more artistic*, but only in legitimate ways.

The present movement has done an infinite amount of good, as it has awakened an interest in the artistic possibilities of photography, and proven beyond doubt that it is capable of distinct individual expression. But that it cannot continue in the present

straight photography could only be reached by making concessions and by roundabout ways. But now as the time for a reaction has come, I sincerely hope that my words will have so much weight with some of the workers that they will read this plea for straight photography and give it serious consideration, for it is my innermost conviction that there must come a change if we do not want to sacrifice all we have gained. I want pictorial photography to be recognized as a fine art. It is an ideal that I cherish as much as any of them, and I have fought for it for years, but I am equally convinced that it can only be accomplished by straight photography.

By Frank Eugene.

"A JAPANESE EFFECT."

way, even Mr. Stieglitz realizes. The total suppression of almost every quality which we customarily associate with photography must cease. The photographer is not justified, as Mr. Steichen claims, in the striving to obtain results of the painter, the etcher, and the lithographer. And I am convinced a reaction will set in which will refuse all (at the very best only feeble) imitations of the material technique employed by any of these arts.

To me the Photo-Seccession movement is merely the extreme swing of the pendulum which is necessary ere a reaction in photographic work will bring it back to a normal but at the same time much higher artistic plane than it has ever occupied before.

I myself have been connected with this movement from the very start; I have stood by it through thick and thin because I realized that my ideal of



"CHARCOAL EFFECT."

From a Gum Print by Mary Devens.

PYROGRAPHY OR WOOD BURNING.

II.—How To Make An Attractive Calendar

BY F. W. GAENSLY.

IN the last number of the AMERICAN AMATEUR PHOTOGRAPHER a few introductory remarks were made concerning Pyrography. In this number with the following explanation and a few illustrations I will endeavor to instruct the student how to make two very pretty pieces of work in the form of calendars. In order to make the illustration No. 1 you first procure a one-ply (meaning one thickness) piece of wood, 8x10 inches, about one-quarter of an inch in thickness; try to get bass wood, which is excellent for pyrography. If you cannot buy it especially prepared for burning procure the same from some carpenter and have it rubbed with the finest sand paper you can get, always rubbing in the same direction with the grain of the wood and you will find after a few minutes work that the wood has acquired a smooth and slightly glossy surface. When the wood has reached this stage it is ready for the sketch. Lay a sheet of carbon paper face downward upon the prepared surface of wood, being careful not to streak it with the finger, as every touch is liable to make an impression upon the wood, and this must be avoided as much as possible, it being difficult to remove the unnecessary impressions without destroying some of the lines which should remain especially when they are made inside the figure

sketched. Next—procure a profile picture (one with strong lines preferred) and laying this upon the carbon trace the outlines of the face, neck, shoulders, ears, etc., etc.; don't attempt any shadows when tracing for those are laid in with the burning pen only, after the outlines have been properly burned. Now bore three very small holes (see diagram No. 1) marked Nos. 1, 2 and 3, and three slits each half an inch long marked 4, 5 and 6. Having made the aforesaid preparations you are ready for the burning. If your pen has the bulb attachment do not press the bulb too often, as your pen will burn too deeply and very deep lines are not desired in this piece of work; if you have a gas pen moderate

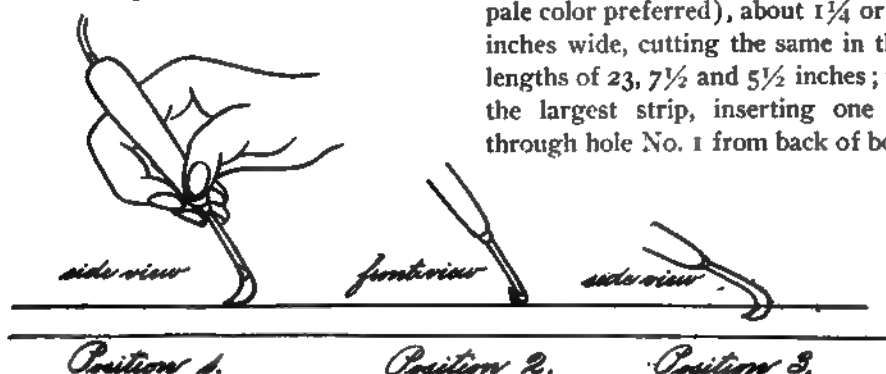


DIAGRAM No. 1.

lines have been made the shadows may be laid in by burning a number of lines of different lengths covering the places where deep shadows are wanted completely, thus producing graduated shading; where little shading is wanted, a few lines will sometimes suffice to traced, being careful to burn a line of even strength along the profile shoulders and neck; these lines should be the strongest in the picture; then burn in the lines of the mouth, eye, eyebrow, nostril and ear, after which burn in the most prominent lines of the hair, which should not consist of one continuous line as on the profile, but of a number of disconnected lines which give the desired effect. When the burning is completed, stain the wood outside the picture with a Van Dyke brown water color, making it somewhat darker in some places, especially around the profile, where a very dark band of brown about half inch in width should be gradually shaded into the lighter stain, thus making the picture stand out from the background. When the stain has dried the effect is that of weathered wood with profile inlaid. Now procure a yard of ribbon (some pale color preferred), about $1\frac{1}{4}$ or $1\frac{1}{2}$ inches wide, cutting the same in three lengths of 23, $7\frac{1}{2}$ and $5\frac{1}{2}$ inches; take the largest strip, inserting one end through hole No. 1 from back of board

CALENDAR No. 1.

the flame to prevent scorching the wood. Hold the pen as in position No. 1 and burn directly over the lines you will tend to take away the flat effect otherwise produced. After the out-



to front, then tie the loops, after which you insert the other end as before mentioned in hole No. 2. (See illustration No. 1.) Then take the $7\frac{1}{2}$ inch strip and insert into slits 4, 5 and 6, with some dull, flat instrument (as shown in the illustration). Take the remaining strip, loop the upper end, and insert in hole No. 3, pasting calendar midway between top and bottom, which completes illustration No. 1.

To make calendar No. 2, prepare strip of wood same as for illustration No. 1; begin by marking off a border of three-quarter of an inch, which should be divided into two parts of



DIAGRAM No. 2.

one-quarter and one-half inch in width, leaving the wider part for the outside. (See diagram No. 2.) After burning the picture, proceed to the background by burning a number of short lines consecutively with the edge of the pen, in irregular rows, as in illustration No. 2; when background has been completed, burn the one-quarter inch border a very dark brown by using the side of the pen (see position 2); then do the one-half inch border by burning small holes into the wood with the extreme point of the pen, as in position 3, after which burn the edges of the wood the same as the one-quarter inch border, and shade background around the head and shoulders to relieve the flat effect. Finish with ribbon and artificial flowers, as shown in illustration No. 2.

(To be continued.)

THE TRINITY OF TECHNIQUE.—III.

Orthochromatism.

BY DR. JOHN NICOL.

THE second of the three essentials in the production of good photographic technique is orthochromatism, or correct color rendering; and although I cannot in this series of articles say much or perhaps anything that I have not already said, the "conservation of energy" is such a power in the mind of the average photographer that nothing short of iteration and reiteration "again and again and many times again" will induce them to leave the beaten path.

As is well known to almost every photographer, the ordinary plate, while probably more or less sensitive to the whole spectrum, is vastly more so to the lower end, the blue and blue-violet, and of course the mixtures of blue and green; so much so indeed that photographs made by all ordinary exposures are made only by such rays and the white light reflected from the green and red and their combinations. It is equally well known that the upper end of the spectrum, red and green and combinations thereof, are vastly more luminous than the lower end, blue-violet and green and their combinations; so that in representing objects in white and black, or in lights and darks, the photograph made on an ordinary plate reverses the luminosities; the brilliant yellow being nearly black and the dark blues as almost white.

While this to artists and even to

others with less trained eyes has been regarded as one of photography's greatest misfortunes, the photographer has got so used to it as not to consider it a fault, and refuses or hesitates to adopt a method involving neither greater cost or trouble, by which practically correct degrees of luminosity would be rendered—the use of orthochromatic instead of ordinary plates. Although ordinary silver bromide is so much less sensitive to the upper and more luminous end of the spectrum than to the lower and less luminous end, it was discovered long ago that by staining it with certain dyes the sensitiveness might be more nearly equalized. A dye of a certain type would increase the sensitiveness to green, another to red, and a mixture of the two to both and all their combinations, so that it might be more or less practically sensitive to the whole spectrum or "polychromatic."

Plates with the film so stained are known as orthochromatic, isochromatic, and by other designations meaning color sensitive; and although, even in the best of them, the sensitiveness to the blue-violet still predominates, their rendering of colors and their combinations according to their luminosities is very much superior to that of the ordinary plate. To still further equalize the sensitiveness, or what is practically the same thing, to sufficiently reduce the activity of the blue-violet, color

screens or filters are employed; generally films of gelatine or collodion stained with such dyes as while passing the red and green shall absorb more or less of the blue-violet, and mounted like a lantern slide, between two plates of glass.

For three-color photography and where the most accurate rendering of color luminosity is essential, the screen should be arranged to suit the plate; but for all ordinary work where absolute accuracy is not essential a slightly orange yellow is sufficient; although two or three screens varying in depth of shade will be found handy. I have some hope that Bayer, to whom photographers are already so much indebted, may soon put on the market a varnish similar to his "Ruby," but without color, and in a separate bottle a suitable coloring matter by which photographers, at little cost, may make for themselves just such screens as they require.

Suppose, for example, that we have an "ortho," "iso," "poly" or any other prefix the maker chooses to put to his "chromatic" or color sensitive plates that is about twice as sensitive to the blue-violet as it is to the red and green; it will be evident that a screen cutting off or absorbing just half of the blue-violet will make the compensation necessary for the rendering of colors according to their luminosities; the only way they can be rendered in white and black: and this is all there is to orthochromatism or orthochromatic photography.

But it is a great deal. Nor are its benefits confined to color in the ordinary sense of the word,—to what is seen at a glance to be red, green or blue-violet or combinations thereof however much diluted with white light; but to everything in "The Heavens above, the earth beneath, or the waters under the earth" that is not white or black, they extend as all are

combinations of color, although they may not be recognized as such.

Admitting that orthochromatic plates or films are not yet perfect and that there is considerable room for improvement, it cannot by any careful observer be denied that even without the correcting color filter, they give a much more correct rendering of the subject, and with the correcting screen the most careless will be ready to admit the vast superiority of the orthochromatic rendering. And yet, strange to say, although the orthochromatic plate has been on the market and its value or superiority recognized for many years; and in spite of all that has been written in its favor, it has, up to within a few months, been used by only one photographer here and there, while the great body of photographers, amateur as well as professionals, have utterly neglected it. We have piped to them but they have not danced; and even now that color sensitive plates and films are being more generally employed, the plate makers and not the plate users are to be congratulated; the supply has created the demand, not the demand the supply, as one could have expected.

As an example of the way in which the plate makers are leading the plate users, we clip the following from *Photography's* notice of two color sensitive plates just issued by one of the oldest of British plate makers, the Verichrome and the Allochrome.

"The users of orthochromatic plates may be divided into two classes, those who desire to employ them in ordinary work and as nearly as possible under ordinary circumstances, and those who desire the greatest possible sensitiveness to all colors and are prepared to work in something approaching total darkness for the sake of safety.

"Both sections will be pleased with the new plates brought out by Messrs. Wratten and Wainwright, designated

respectively the Allochrome and the Verichrome. The first is of moderate general sensitiveness, say about the same speed as plates marked sixty on Watkins's list. It is a clean working plate, gives good gradation, and readily acquires density. It is markedly sensitive to green, and with full exposure gives fair results with the yellow and slight indications in the red.

"As a landscape plate, and for subjects in which red has little part, the results are admirable, though, of course, to get the full benefit of the color sensitiveness it is necessary that a yellow screen should be used. For landscape work, flowers, and portrait studies, the screen need only be of a pale tint. When full yellow, orange, and red are in combination with blues and greens a deeper screen will be required, but for such work it is better to use the Verichrome plate. The Allochrome plate may be worked in the ordinary orange or red light used for dark room illumination if reasonable precautions are adopted.

"The Verichrome is an extremely rapid plate, say 150 as compared with other plates on the Watkins list. It is sensitive well into the red even without a filter when full exposures are given, and with a suitable screen all colors are rendered in correct intensity, the tint of the screen being such that from fifteen to twenty times the normal exposure is required.

"A pale yellow screen is all that is required for ordinary purposes. The plate, of course, must be shielded as much as possible from the action of light during manipulation.

"Apart from speed and color sensitiveness, the general qualities of the Verichrome plate are identical with the Allochrome. Both are in every respect admirable."

Nor do our plate makers lag behind. Led perhaps by Carbutt, all or most of the others have followed suit and are

sending out color sensitive plates of a quality and reliability second to none. They, as a rule, cost no more than the ordinary plate; keep as well, or at least long enough for all ordinary conditions; are as sensitive and in as many degrees of rapidity; and are as easily managed even in the ordinary light of the dark room if the dish be covered during the greater time of development, although not more than a sensible photographer covers the ordinary plate.

The manufacture of color sensitive plates, by whatever name they may be known, is now so well understood that the only difference between them is in the result; the color rendering of the one being practically true, while that of the other is essentially false. And that difference is more serious than may at first sight appear. As I have said before, every part of every subject photographed that is not white or black is a color combination; and color combinations rendered in white and black, whether by photography or any other means, are appreciated by the eye only through their luminosities. The photographic eye as represented by the ordinary plate sees only the less luminous end of the spectrum, representing it as light; while the more luminous end it sees not at all unless by what white light it may reflect. The orthochromatic plate, on the other hand, sees both ends; and although not yet quite according to their luminosities, comes much nearer the truth; and when aided by a suitable color filter reaches the very bottom of the well.

All this being so, "Which nobody can deny," how long will photographers stand in their own light? How long will they continue to demand and makers continue to make plates the rendering of which is so false, when they *could* use and makers *can* make plates that render luminosities as seen by the human eye?

CONCERNING SODIUM SULPHITE.

BY JOHN CLARK.

WHILE it is quite true that, according to the teaching of THE AMERICAN AMATEUR PHOTOGRAPHER, formulæ is of less importance than the method of its employment, there can be no question as to the importance of seeing that the material that enters into that formulæ is of sufficiently good quality for the purpose; to see not only that it is all right when got, but that, after standing on the shelves for some time, it has not deteriorated by keeping.

While not altogether agreeing with one of my long ago teachers who used to say "Time is Force," there are few things that do not suffer more or less during its passage, although the changes that occur are due more to the all prevading greed of and for oxygen than to the action of force as generally understood. And this is the case with sodium sulphite more perhaps than with any other substance employed by the photographer.

Roughly speaking, sulphur unites or combines with oxygen in two proportions forming gases represented by SO_2 and SO_3 , which uniting with water form H_2SO_3 and H_2SO_4 , sulphurous acid and sulphuric acid respectively. To procure sodium sulphite and sodium sulphate it is only necessary by ways well known to the chemist to displace the hydrogen by potassium, making them Na_2SO_3 and Na_2SO_4 ; the latter the well known "Glauber salts," a

disagreeable aperient that the rising generation should be glad that its periodical application is no longer considered essential to health.

Sulphur, in the case of sulphurous acid, is combined with two atoms of oxygen, and in sulphuric acid with three. In the former it is said to be in an unsaturated or unsatisfied state, and its salts are always ready to get a hold of what it seems to consider its rightful quantity. Sodium sulphite, Na_2SO_3 , therefore, has a tendency to take hold of oxygen and become sodium sulphate, Na_2SO_4 , which not only ceases to act as a preservative, but is otherwise injurious in the developer. The only way to avoid this is to keep the bottle or other containing vessel tightly corked or closed so to, as far as possible, exclude oxygen, which at best is only a temporary remedy, and therefore the fresher the supply the better.

Nor is the passing from the sulphite to the sulphate the only danger; the sulphite frequently contains considerable quantities of carbonate which not only interferes with the calculations, but tends to the decomposition of that which it was intended to preserve. It is made by passing a current of sulphurous acid gas through a saturated solution of sodium carbonate, Na_2CO_3 , the sulphurous acid taking the place of the carbonic acid; and carelessness in the manufacture frequently results in leaving large quantities of the latter

not displaced; hence the advice so often given, to neutralize the sulphite with citric or other acid before using it in the developer.

Sodium sulphite is found commercially in two forms; more or less translucent crystals, and a dry powder, sometimes the one and sometimes the other being prescribed; and when one is to be substituted for the other the dry is said to be just twice the strength of the crystals, which is quite correct provided the whole of the seven molecules of included water has been driven off. But the drying is not always done with sufficient care, and on the whole it is better to use the crystals as deterioration is more easily recognized. So long as they remain free from a coating of powder it may be taken for granted that they are in good condition, and should they have a powdery coating it may be washed off and the clear crystals only used.

In no chemical used in photography does the proportions recommended vary so much as in the sodium sulphite. That may arise from the different pur-

poses which the formulæ makers have in view, the preservation of the solution or the color of the resulting negative; the latter, especially where pyro is employed, varying from a bluish deposit and almost clear glass in the deepest of deep shadows, to a very non-actinic brown with more or less of a stain all over. The smaller the proportion the more non-actinic and the deeper the stain, and the larger the deeper the bluish tint of the deposit and the clearer the glass.

An examination of a large collection of formulæ for the developing solution shows proportions to the reducer varying from two to ten, the latter occurring only once and probably for some special purpose, as it is certainly for ordinary work much too large; and in relation to the alkali from a half to four times as much. But with sulphite as with most other things "the happy medium" is best, and as I prefer to go slow, I like to lean to the lesser rather than the larger quantities of both the sulphite and the carbonate, and find four of each to one of the reducer answer my purpose admirably.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

IT is well sometimes "To see ourselves as others see us," although we may not always O. K. the view. The following comes from *The Hardware Journal*, and there is more truth in it than most of those implicated will be disposed to admit. After saying as I

have often said, that photography cannot be learned with a hand camera, it continues: "There are so many button-pushers in the photographic world just now that one gets a little nauseated at times, both in regard to the photographic twaddle that is uttered and

the execrable things called photographs which are turned out by the crowd of hand-camera workers who know as much about the art of photography as the average stay-at-home knows of Timbuctoo. This hand-camera craze may be very nice for the makers of instruments, plates, films, and papers, but it is not photography, nor is it conducive to the proper study of a subject which, simple and easy though it may be, requires considerable thought and care, more certainly than is given to it by 99 per cent. of the so-called snapshotters."

* * *

In looking over my collection of clippings I came on one, I neither know when or from where, but it is so applicable to much of the work of the present time that I cannot resist the desire to reproduce it.

"The following passage, taken from the first of Sir Joshua Reynolds' classical discourses, is especially suitable for the present moment. A time when it has become a fashion to sneer at all that has stood the test of time. When the false coin of affected *eccentricity* is being circulated as originality. When those who have read and misunderstood some shilling hand-book think they 'know all about composition and the rules of art.' When those who know something less than nothing, assert that there is nothing worth knowing—that rules are the fetters of genius. Sir Joshua says: 'I would chiefly recommend that an implicit obedience to the rules of art, as established by the great masters, should be exacted from the young students. That those

models which have passed through the approbation of ages should be considered by them as perfect and infallible guides; as subjects for their imitation, not their criticism. I am confident that this is the only efficacious method of making a progress in the arts; and that he who sets out with doubting will find life finished before he becomes master of the rudiments. For it may be laid down as a maxim that he who begins by presuming on his own sense, has ended his studies as soon as he has commenced them. Every opportunity, therefore, should be taken to discountenance that false and vulgar opinion that rules are the fetters of genius. They are fetters only to men of no genius; as that armor which upon the strong becomes an ornament and a defence, upon the weak and misshapen turns into a load, and cripples the body which it was made to protect.'"

* * *

Eleven thousand dollars finds its rightful heir through an old photograph, another of the many uses to which photographs may be put. When John Walker of South Omaha died and there was found sewn up in his clothes and in the bands of his hats gold and notes to that amount, it seemed impossible to find the rightful heir to the find until Mrs. Herr of Suffolk County, Mass., came across an old photograph of herself when a girl, which had been printed from the same negative that had produced a print found in the possession of the owner of the cash, and on which was written "My Sister." Moral: Keep your old photographs; they may be of inestimable value some day. * * *

Professor Herkomer, writing in the *Magazine of Art*, says: "Just make an outline of the most fascinating figure in a photograph from nature, and see what an inartistic thing it becomes

when boiled down to that test. Its proportions and lines are absolutely impossible from our point of view. 'Like a photograph' is a just expression of opprobrium." Just so. But who or what is to blame for that? Not certainly photography but the photographer. The "Our point of view" in the professor's sentence tells the whole story, although he does not seem to know it. It is the employment of a lens of such short focus as to make the photographer select a far too near point of view. If every portrait photographer would take the advice of the well known F. M. Sutcliffe, never to use a lens shorter than twice the length of the longest way of his plate, there would be no cause for such complaint.

* * *

Photography's Professional Challenge Cup annual competition either does not bring out Britain's best workers or they are farther behind than I had supposed. Referring to the competition which closed on December 31 the editor says: "The entries were very numerous, but with three or four exceptions the judges report that the work manifests a curious uniformity of mediocrity. The prevailing defects would seem to be harsh spotty lighting, obtrusive studio furniture, and the use of unsuitable printing media, such as pink matt-surface silver paper for vignettes."

* * *

Under the title of "Titles while you wait," *Photography* contrives to force a little fun out of a volume about to be published by *The Studio*, the object of which is to help painters and photographers, not I take it as *Photography* takes it, to find titles for work already accomplished, but to be suggestive of work to be undertaken. And that or something like it is just what I have long urged would-be picture makers to do; and what I know has been helpful to many. Not that I advise select-

ing a title and looking for a subject to suit it; that would be as foolish as an attempt to illustrate a story, a kind of work that has rarely been a success; but to have the memory well stored with suitable titles, or where the memory is treacherous, to have a list in the pocket, and on the discovery of a subject with pictorial possibilities look up a suitable title and work up to it at every stage of the operation. Of course the kind of "born not made" artists do not need any such aid. Subjects and titles flow like Hertzian waves, from their inner-consciousness, their artistic temperament, or whatever it may be that makes them different from their less favored brethren who, as I know from sad experience, must look to external aid for that that will not come from within.

* * *

Throw kettles to the dogs. Here is a method of water heating without either kettle or fire, and one that is always at hand, the wonder being that it was not thought of before. I am indebted for it to a correspondent of *The Photographic News*, from which I clip the following paragraph. It is signed only, by initials, W. J. N., which is a pity, as I should have liked to have handed down his full name to posterity.

"From this time on till April one may expect more or less frost. The young photographer would do well to look to the temperature of his developing solution. Those who worked with such solutions as required so much water to have been used in making them up just before development may find the following wrinkle occasionally of much service. A little time ago the writer began to develop a plate with pyrosoda, and although the plate was exposed by meter, there was no appearance of anything at the end of four minutes. What was to be done? A developer made up with warm water

would do the work, but to leave the dark room just then was out of the question. A happy thought struck me—Why not warm some water in my mouth? No sooner thought than done. No wonder the developer did not work—the water was so cold I could scarcely bear it in my mouth. When it had so altered that I did not feel the coldness of it, I emptied 1½ ounces into the measure, made up a new one, development went ahead, and I had a capital negative.”

* * *

I don't generally look for amusement in the staid old *British Journal of Photography*, although it appears occasionally without being looked for. One of its contributors recently in telling of his researches after a combined developing and fixing solution, says he began with a pyro-ammonia developer half the normal strength to four ounces, of which he added *one ounce of a saturated solution of potassium cyanide*. Those who remember how rapidly a solution of cyanide of only a few grains to the ounce fixed a collodion plate will not be so surprised as he was to know that “The plate was fixed in a few minutes, but not a trace of the image appeared.”

* * *

When the members of the “P. A. of A.” decided to hold the 1904 convention in St. Louis they did the best and the worst they could have done for that annual meeting; the best because there will be the feeding of two dogs with one bone; the Great Exposition will take hundreds of photographers to St. Louis that but for it would not then be there, and there will be such a crowd as never before were at a convention. And it was the worst because of the Exposition. If photographers are as others, they will reason thus: “we can see and hear all that is to be seen and heard at a convention any year, and

one is very much like another; but such an Exposition comes only once in a lifetime”; with the result that convention lecturers and demonstrators will lecture and demonstrate to almost empty benches. That at least is the way that it appears to me, and I shall be glad indeed to find that I am a false prophet, and that the “World's Fair Convention” shall be, both in attendance and achievement, greater than any of its predecessors.

* * *

It is amusing to see how often old things come up as novelties, and are received and discussed as such by those whom, one would have supposed, knew better. A case in point occurred some time ago in a paper read before the Franklin Institute, and actually reproduced in *The British Journal of Photography* without comment. Boiled down, the paper occupying about three-fourths of a column, records the fact and the experiments that led to the *discovery* thereof, by A. W. McCurdy of Toronto, Canada; that a developed and washed plate may be fixed in ordinary light without being fogged. I had supposed Mr. McCurdy's *discovery* had been known to everybody from time immemorial, and know that thousands, myself included, keep the fixing bath in a room separate from the dark room and fully lighted. In the old collodion days it was no unusual thing to see towards the end of the day a dozen or so of negatives only sparingly washed after development, that had been exposed to bright sunlight waiting to be fixed, the photographer not caring to fill his tent with cyanide fumes while working in it; and never a one was found to be fogged thereby. But it is the old, old story, nothing new under the sun, the only wonder is that he did not find his way to the patent office before it was given to a forgetting and forgiving world.

CONTRIBUTION BOX.

Our readers can make this department one of interest and mutual benefit by sending in occasionally brief articles on their experiences. Short, plain statements of facts or ideas, however crudely written will be welcomed.

All those willing to help us in the way indicated in "Looking Ahead" should send their contribution direct to Dr. John Nicol, Tioga Centre, N. Y.

Night Lights Instead of Candles.

Sometime ago when far from the comfort and convenience of my own dark room, I had recourse to a candle as a source of illumination for development and found it far from satisfactory. The heat confined in the lantern caused the candle to melt and run down, and in some cases to actually double up, while, when the wick got long, it smoked and the light became dim.

The remedy was found in the old-fashioned night light, practically a short, thick candle of very hard wax, about one and a half inches high and two inches in diameter; and costing only two or three cents. They give a clean, clear, steady light for a long time, and are in every way a great improvement on the candle. C. E. C. K.

A New Method of Coloring Photographs.

The following method of coloring photographs will give anything from good to best depending on the ability or patience of the operator, even the first attempt resulting in a charming picture. From a good negative, the simpler the subject the better, print on a piece of rollable film exactly as for a lantern slide, one or two trials will show to just what density the positive should be. Eastman's "N C" film answers admirably. Select a suitable backing paper of any delicate shade, although for many subjects white does as well as any kind of tint, and press them against one of the panes of the window, the film next the glass. On the paper draw roughly a pencil out-

line of the subject as a guide to the application of the color which may be laid on the paper with a free hand, the photograph giving all the beautiful shading. Bind them together, glass in front and cardboard behind, to keep the film flat, and the color will be found to show through the film with all the beauty of a painting by a good technical artist. I have not tried pasting the film and colored paper together, but think it might be an improvement.

JOSEPH RANDAL.

Good Light in the Dark Room.

Those whose eyes have suffered from too much exposure to ruby light will be glad to know that even for the most sensitive plates a suitable orange will be found to answer equally as well as the ruby, leaving the rabbit edges of the plates without a trace of fog. My light is 8x6 inches in a home-made lantern with an ordinary one inch wick kerosene lamp. There are two plates of glass, one yellow the orange, and neither very dark, and between them a sheet of oiled "post office paper," oiled to make it more translucent. The light is sufficient to make everything in a room eight by ten feet comfortably visible and by which I can read a newspaper easily. For the last three years I have developed altogether by "Time" and while watching for the "first appearance" a sheet of cardboard shades the plate from direct light, leaving just enough to see it when it comes.

I have just slipped a negative into the fixing solution a description of the development of which may give an

idea of "comfortable development." Before me hangs a cord with a stone at its end, swinging seconds, and from that I learned that the time of appearance was thirty seconds. The dish was covered and the "appearance" point of the eikronometer turned to 30, when,

on looking for 20, the developing factor, on the appearance ring it was found to be opposite to 10 minutes. All this was done in a tithe of the time it takes to tell, and at the end of that time I had a—a good negative. GEO. M. BARRIE.

NOTES AND COMMENTS.

WHITE WRITING ON BLUE PRINTS.

—F. F. Moody, in *The Scientific American*, says that for writing in white on blue prints nothing is better than a solution of potassium oxalate (ten per cent.), to which a little gum arabic has been added to keep it from running.

PER CENT. SOLUTIONS.—It is amusing to see the different methods that are from time to time given, each as the only correct ways to make a ten per cent. solution, especially as a few grains out or in, in most solutions at least, is not of the slightest consequence. But, judging from the many questions that come to us, photographers generally are weak on figures and therefore we have pleasure in clipping the following from the query column of *The Camera*. The second column is the number of grains and fractions thereof required to make an ounce of the percentage opposite it in the first column, the ounce of liquid being that of 437.5 minims.

We give below a few per cent. solutions, which are nearly correct, the variation only being about a fifth of a grain to the ounce. Those marked with an asterisk (*) are correct:

1.....	4½
2.....	8¾*
3.....	13
4.....	17½*
5.....	22

6.....	26¼*
10.....	44
20.....	88
25.....	110
30.....	130
40.....	175*
50.....	219*

THE ANAGLYPH.—Although we have mentioned it several times we doubt whether many of our readers know what it is. It is one of the many inventions of that prolific inventor Ducos du Hauron, and is a method of seeing stereoscopically one apparently more or less blurred image. It is, however, really two images, the two halves of a stereogram, superimposed the one printed in one color, the other with its complementary, say, red and bluish green; and they are examined through spectacles the "eyes" of which are similarly colored. Hitherto, however, it has never got beyond the curiosity stage, until recently taken in hand by the *Deutscher Verlag* of Berlin, and in such a way that its popularity is assured.

Under the title of "Plastische Weltbilder, or, according to *The Amateur Photographer*, "Plastographical Views of the World," it is being issued in books of fifteen anaglyphs about 10 by 7 inches each, at the price of about 25 cents; ten of such numbers being already on the market. A portable anaglyphoscope in the shape of a pair of

spectacles with "eyes" of colored gelatine for their examination is sold along with the books for about six cents. Who will be the first to follow the good example and put Plastographical pictures with their accompanying Plastographiscope on our market? There should be money in them even at the small price.

COLORING STEREOSCOPIC SLIDES.—In spite of the many disappointments of the promised revival of the stereoscope we have faith in its eventuation some day, and therefore have pleasure in reproducing the following extract from *The British Journal of Photography's* report of a meeting of the Stereoscopic Club, in which a new and very simple method of coloring transparencies is fully described.

"Mr. W. I. Chadwick exhibited a number of stereoscopic transparencies by stereoscopes conveniently arranged, with suitable lights on the table behind the stereoscopes. All the pictures were colored or tinted, but so modestly colored that many members did not notice the coloring until, after handling the slides, the color was observed on the ground glass at the back of the slides.

"Mr. Chadwick dissected two of these slides to show the coloring and next proceeded to color the ground-glass backing for a new transparency he had printed during the afternoon. The transparency is held in the left hand, with the film side in front—towards the observer. The ground glass is now laid in front, with the ground side out. The subject of the picture was thatched cottages in Devonshire. First some burnt sienna oil color squeezed out of a tube was applied by a piece of cotton rag stretched over the finger to the roofs of the cottages in dabs or smudges. Then some green oil color is applied in a similar manner to the trees; the foreground, being a white road, was darkened by a few dabs of ivory black, both ends of the ground

glass being treated in a similar manner for the dual pictures, the transparency behind the ground glass being the guide for applying the oil colors, and, as was shown, no particular care seemed to be necessary, for it did not take Mr. Chadwick much longer to do this than it will take the reader to read this.

"The ground glass was next removed to a pad of old newspapers on the table, and, as was said, all this mess has now to be removed, and in the cleaning of the surplus color sufficient can be rubbed into the ground surface to give the effect. It will be difficult with a piece of cotton rag to remove all the color, but if the color has got on the wrong place—"overshot the mark"—it can be instantly removed by a drop of ether applied by a clean piece of rag. The ground glass is now applied to the back of the slide, a paper mask and cover glass in front, and the slide is ready for binding in the ordinary way. Mr. Chadwick colored two slides and made them ready for binding in about twelve to fourteen minutes. It is sometimes difficult to get rid of the "snowiness" in stereoscopic slides—say, an ivy-covered cottage—but by adopting this very simple method what would otherwise be a very inferior slide is very much improved. Of course, when the slide is much under-exposed the best plan is to make another, and to allow the coloring or tinting to be sufficient for the high lights, and not to show them as "colored" slides, but to let the observer find that out for himself—which, when properly done, they do not often do."

SODIUM CARBONATE, (Sal Soda).—We should not like to say that any of our chemical manufacturers are as dishonest as are some of those on the other side, but as the pure article is not expensive, it would be well for our photographers to take the advice of *The Amateur Photographer*, from

which we clip the following paragraph.

We have occasionally warned our readers that the crystallized carbonate of soda sold as "washing soda" may contain so considerable a proportion of the inert sulphate as to render it unsatisfactory simply by default to alkaline strength, but we were not prepared for the disclosures made at the Mansion House Police Court a few days ago, when a trading firm was brought to account for selling washing soda which consisted entirely of sulphate, and was consequently quite valueless for the purposes to which washing soda is applied. It is well for photographers to use the purified soda crystals, which can be had for a few pence a pound from the photographic dealers.

PHOSPHORESCENCE OF PHOTOGRAPHIC PLATES.—That phosphorescence sometimes made its appearance on plates has long been known, but not before have the conditions by which it could be produced at will been so clearly stated as by the following communication to *Nature* by Mr. T. A. Vaughan. He says: I have not yet thoroughly examined the light or radiation emitted in these experiments, but its actinic power is low, and it appears to render the brush discharge from an induction coil more luminous. The sensitive silver salts, such as the bromide, iodide, and chloride, if precipitated and kept in the dark, have the property, under certain conditions, of emitting light in the degrees proportionate to their sensitiveness. Thus the bromide, which is the most sensitive, emits more light than the iodide and chloride. A convenient way of observing the phenomenon is to take a bromide photographic plate and place it at once (without having exposed it) in ordinary pyro soda developing solution and allow it to remain for ten minutes. Take out of the solution, wash, extinguish the "red lamp," and in total darkness plunge it suddenly into a dish con-

taining a saturated solution of aluminium sulphate. The plate immediately becomes phosphorescent, and the solution also is luminous, but not so bright as the plate is at first. The light gradually weakens, and in a minute or two dies away. On pouring the solution off the plate into a bottle, the whole body of the liquid becomes luminous, and has the appearance of "bottled moonlight." It remains so several minutes, and the light is increased by shaking the liquid. If half the plate be exposed to the action of white light for a second before treating with the pyro soda solution, that half remains dark and emits no light when the plate is put into the aluminium sulphate. If the plate is given a short exposure in the camera, and developed and put into the aluminium sulphate solution, the image will appear dark on a phosphorescent background. On placing some precipitated bromide of silver (which had been kept a few days in corked test-tube in the dark) in a porcelain dish and exposing it to a bright red light whilst adding the pyro-soda solution, it appears black, but on pouring off the solution the precipitate gradually assumes a bright green appearance under the red light, whilst in white light it appears dark grey or black. The remarkable part of these experiments appears to me to be the fact that the exposing of the silver salts to the action of light destroys their power of emitting it under the treatment described, whilst the salt precipitated and treated in total darkness emits light freely.

EXPOSURE AGAIN.—Horsley Hinton, in an article on Pictorial Photography, winds up with "Finally, give full exposures, a little more than you know to be necessary, and dilute your developer, using twice as much water as the prescription recommends, so that it will work slowly, bringing out detail and half tone, but without exces-

sive density." "The advice of the successful is golden"; Horsley Hinton is universally recognized as a successful pictorial photographer; *verbum sat sapienti*.

Photography at the Fair.

HOW about photography at the Fair? seems to have settled down to one phase of the, at one time, many phased question: is the handling of a hand camera to be free or only on the payment of a fee?

When a somewhat reluctant promise to admit photographs that were up to a certain or rather very uncertain mark to the so-called fine art building we were, in some quarters, found fault with for characterizing it as a promise with a string; and now the string seems to have been pulled in, there being in the recently issued circular no word of it.

But while the question as to *where* photographs are to be exhibited interested tens, that of *how* cameras are to be admitted into the grounds interests thousands; and its decision may have a greater influence on the "Gate" of the great show than those in authority seem to think.

The Council of Concessions and Admissions, or by whatever title those having these departments in charge are known, doubtless look at their work from a strictly business point of view; as while getting the most they can from those to whom concessions are granted, that will only be secondary to the value of those attractions in bringing money to the gates.

While not ignoring sentiment then, we would make our plea for the free admission of hand cameras to the grounds of the St. Louis World's Fair on purely business grounds. Probably not less than five per cent. of all possible visitors to the Fair are camera carriers who regard their cameras as much, although not carried as fre-

quently, as personal accompaniments as their watches or umbrellas; and who neither would nor could see any justification for separating him from the one more than the other, or requiring a fee for its admission. We do not mean, of course, to imply that many such would in consequence decline to go to the Fair, although the feeling engendered, a kind of antagonism, would doubtless keep many away. But we do mean to say, and to say most emphatically, that thousands of such, whose interest in the exhibition is general rather than special, will see all they care for in a single visit, while, had they been allowed to carry their cameras, would have made at least a dozen.

Our plea is only for the free admission of cameras operated in the hand, and not larger than 4x5; and if the Powers that be could only understand that at least seventy-five per cent. of all the exposures so made are little better than failures, they would realize the reluctance to pay what is regarded as an imposition. From all this we hope that the Powers that be will see that the free admission of hand cameras *will* pay.

Cheaper Alcohol.

ONE of the many things that we have never been able to understand is why, in a country supposed to be ruled by the ballot box, those connected with the Arts and Crafts in so many of which alcohol is a necessity, are at a disadvantage with their competitors in other countries; they getting that essential article at a price only a little beyond the cost of its production while we have to pay the added duty and the profit thereon.

It is true that since the dry plate almost entirely superseded wet collodion, the consumption of alcohol by photographers is very much lessened, but enough still enters into their various

preparations to make its price a matter of considerable importance. No question occurs more frequently in our "Answers to Correspondents" than concerning "Methylated Spirit," the name of the "denaturized" alcohol authorized to be supplied duty free by the British Government, it occurring frequently in formulæ copied from the British magazines.

Our attention has at this time been directed to the subject by the coming of a quantity of literature from the "Committee of Manufacturers formed to assist in securing cheaper alcohol for manufacturing purposes," with an office in room 627 of 21 William street, New York. From it we learn that a bill has been introduced in the House of Representatives by Mr. Boutell, the object of which is to provide for "Untaxed denaturized alcohol for industrial purposes." The bill is accompanied by a pamphlet showing how German industries have been developed by a policy of cheap alcohol for manufacturing purposes, and the benefits that would accrue to American manufacturers and farmers from a similar policy. The statements in the pamphlet are so convincing that we cannot believe any one can read them without becoming a convert to the scheme, and opposition in either the House or the Senate can only arise through ignorance or worse.

Those interested in the subject, and that means almost everybody, should send for a copy of the pamphlet, and then use whatever influence they can, directly or indirectly, bring to bear on Congressmen and Senators, so as bring about the desired legislation.

While on the subject we may say that the denaturizing of alcohol is a more difficult matter than at first sight would appear. We had something to do with it when the British Government first took the matter in hand, and it was soon found that the drink habit,

or appetite, was more difficult to overcome than could be supposed. Two preparations or classes of free spirit were allowed; "methylated spirit" and "finish." The first was pure alcohol, to which had been added methyl alcohol or wood alcohol, and for the dealing in which a license had to be obtained, although it cost nothing. The second had in addition two ounces of shellac dissolved in each gallon, and was intended for varnish making, French polishing, hat making, etc., and required no license.

But "drunk as a hatter" is in some parts of Britain a common saying, and there may be cause for it, as it was found to be no uncommon thing for the hatters and even some other tradesmen to dilute the finish with water, strain the mixture through their handkerchiefs, and drink the strained spirit. Less nauseous and so much more largely consumed was the methylated spirit, being sold by the thousand bottles in the slums of the larger cities under the names of the essential oils, a few drops of which had been added with a view to evading the grasp of the law. Half a dozen could get gloriously drunk on a quart bottle (24 oz.) of spirit of peppermint costing a shilling.

To protect the revenue and at the same time the stomachs of the drinkers mineral naphtha was substituted for that from wood, and, so far as we know, with success, although for some purposes it is not so suitable as the previous preparation. The British Government, however, being really a government *for* the people, allow such manufacturers, under certain conditions, to get the older methylated spirit so that every one is suited. The denaturizing material must be sufficiently nauseous to prevent even the most hopeless toper from imbibing it, not such as to be injurious to any of the manufactures into which it will enter,

and must be of about the same boiling point as the alcohol to prevent its separation by fractional distillation; all of which may be safely left to some of the Government chemists, and with them and the legislators we in the meantime leave the subject.

A Simple Means of Controlling Gradation in Bromide Prints and Lantern Slides.

BY J. STERRY.

There is a great difference between the working of bromide paper and lantern plates on the one hand, and the making of negatives or transparencies for reproduction on the other. This is due to the fact that the conditions required by the former are far more exacting. With bromide paper the starting point for the high lights must be the white paper itself and with lantern slides it must be clear glass, passing all the light which reaches it from the lantern; whereas both with negatives and transparencies for enlarging and similar purposes a certain amount of reduction of silver all over the plate is essential to the obtaining of the best results.

If we consider bromide printing, the remarks on that subject may be taken as applying also to slide making, as in this respect the two processes are practically the same, though the latter is not quite so difficult to deal with, since the illumination through a slide is so superior to that upon a print.

When taking up bromide printing it is not long before we find that there is practically little or no control in the working of it. To obtain the best results, if the negatives include a full range of illumination they must have been developed exactly to suit the particular paper in use, or another paper must be chosen to suit the negative. Variation in the time of exposure or in the time of development does have some effect, but it is comparatively small and certainly unsatisfactory. Questions are often asked in photographic papers upon this point, and various suggestions have been given, such as printing through colored glass, longer or shorter all fail to give anything like what one could call real and efficient control. This important fact is not generally recognized.

Latterly, slower and slower papers and lantern plates have been introduced; so that now both may be worked by gaslight

or even by weak daylight. These are found also to give deeper blacks, but necessitate the use of very thin negatives—that is to say, negatives that have had a correct exposure, of course, but have been but so slightly developed that they are useless for almost any other process, though perhaps still suited to enlarging upon a rapid bromide paper, the negative acting under these altered circumstances, as is well known, as though it were denser or more fully developed.

What is really wanted is some process by which a negative, which has been developed specially to suit, say, the carbon process (which requires the greatest development of any), shall still give as good a result upon a bromide paper which normally requires the thinnest of negatives. Every other case, of course, will be met, if this extreme one can be coped with successfully.

The method described does this. It is capable of giving any variation desired—from the strongest black and white to the most delicate softness—and, speaking generally, without making any change whatever in the exposure. The proper time for exposure is first found by trial, the object being to obtain in the usual way just the faintest detail in the highest lights, using the developer so as to bring this out within a reasonable time. By this is meant that the paper should practically have full development. This is the only way to obtain the same result continuously, and then no damage will be done should the print remain in the developer for a little longer time than is absolutely necessary.

In a paper read at the Royal Photographic Society on Tuesday, the 26th inst., upon "The Separation of Development into Primary and Secondary Actions," it was shown that when a film is soaked between exposure and development with a solution antagonistic to the developer, the gradation of the negative is entirely altered, such alteration being largely dependent upon the strength of solution and the time of immersion. It was also shown that this action was not a destructive one, as the fine detail still remained whilst the denser portions were pushed back along the scale, the deepest blacks only appearing where the exposure was greatest. This is exactly what is wanted for our purpose—the starting point, the high lights, remaining the same, whilst the deep shadows are varied—thus giving a distinct control. We now have, in fact, in bromide printing to observe the exact opposite of the old rule for negative making—"expose for the shadows and let the high lights take care of them-

selves." We must expose for the high lights and let the shadows take care of themselves, or, rather, we must control the shadows as may be desired.

Several chemicals are suggested for this purpose—potassium bichromate, chromic acid, potassium permanganate, etc. Slow plates will be found to require weak treatment, and quick plates one much stronger.

As we are dealing with a slow emulsion bromide paper, potassium bichromate is all that is needed to effect the fullest control required by the most dense negative. In some cases chromic acid is superior, as it may be used much weaker, and the neutral chromate, which is useless, has not to be washed out.

The negative selected as an example was chosen as most unsuitable for bromide printing, and velox carbon was taken because it requires a very delicate negative to get the best effect. Of course, the ordinary exposure and development gives "chalk and soot" results—as hard and objectionable as can well be obtained. There is a complete clogging up of the shadows, which become black masses without the faintest trace of detail.

All that was done to obtain the second print (both prints had the same exposure) was to soak it between exposure and development in a solution of potassium bichromate—one part in one thousand—for two minutes, to pass it through a dish of water to take off the bichromate solution on the surface, to pour on the developer, and to continue the development until the desired result was obtained in the shadows. Still softer results were readily obtained by using the bichromate stronger—say one in a hundred.

It is desirable that the developer be made up with less of the developing agent than usual—say half to a quarter—keeping everything else the same, thus enabling the bichromate to act more effectively.

It is evident that this method applies equally well to bromide enlargements, presuming, of course, that the paper gives normally too hard a result, or, what is the same thing, that the negative is too hard to give good results with that particular paper.

There is no more difficulty in finding the right strength of the bichromate solution, and the correct time of immersion to suit a particular case, than there is in obtaining the correct exposure. Indeed, there is a good margin, because detail comes out first, and the depth of shadow is gradually added by continuing development. The one most important defect in

bromide paper is thus removed, which is the sudden transition from half-tone to the deepest black obtainable.

The necessity for similar control in lantern-slide making is not so evident as in bromide printing, because the time of development can be varied to some extent to suit the negative, which is not the case with paper—at least, not to an extent which is at all satisfactory. When using the very slow plates—which, like the slow papers, are best suited to thin negatives—it is often found impossible to get satisfactory shadow detail, and a treatment similar to that given to the paper as described will be found to soften the result and bring out all that is desired.

Lantern plates will require a stronger solution of the bichromate, as the action has to extend over a much greater scale of densities. One part of bichromate in a hundred is a good strength with which to commence, and one minute immersion.

It cannot be claimed that the results are truthful, but any process that necessarily starts with clear gelatine for the high lights, and therefore uses the under-exposed portion of the characteristic curve of the plate, cannot possibly be really truthful. There is not any marked variation, however, in the correctness of representation, and a far more satisfactory result can in many cases be obtained with ease and certainty by adopting the plan described.

The effect upon negative work is much more complicated, and has been fully dealt with in the paper referred to, read before the Royal Photographic Society.—*Photography*.

Collapsible Cabinet or Dark Room.

L. F. Wilson, Inwood, W. Va., sends us a description of a portable dark room which he has invented and secured under U. S. patent No. 737,988. In use the contrivance is roomy and well ventilated and when not in use is quickly and easily folded into small space for storage or transportation. It would be a valuable adjunct to professional or amateur, and aside from photographic use may be utilized as a wardrobe or closet. As Mr. Wilson is so occupied that he does not care to engage in the manufacture he offers his patent for sale outright or on a part cash and royalty basis to any enterprising manufacturer.

Ruby Varnish—Bayer.

In our January number we promised to return to this, another of the excellent Bayer photographic products, and after all

sorts of likely uses and some that could hardly be classed as so, we have nothing for it but praise, as a most valuable addition to the *materia photographica*.

It is evidently a solution of a very tough film giving pyroxylin in alcohol or acetone and ether, colored with matter that, according to the rough spectroscopic examination we were able to make, transmits only the red, and so capable of making the safest of "safe lights" for the dark room. Old collodion workers, alas! growing fewer and fewer every day, will have no difficulty in coating plates of any size, and the modern photographer may do it as easily after a little practice. He may use syrup of a suitable consistence to practice with because cheaper and less volatile. Taking the plate by the near left corner in the left hand; if small, by the thumb and index finger merely, but if large, then by the thumb above and all four fingers below. Holding the plate level, a pool of the syrup is poured in the centre, and he will soon know just how much is required for any size, and by gently tilting made to flow first to the corner next the thumb, then to the far left corner, then to the far right, and lastly, to the near right, at the same time tilting or raising the plate so as to make the surplus syrup flow back into the bottle. During this last part of the operation the plate must be gently rocked to and fro to prevent the syrup or varnish running into ridges, and when nearly the last drop has left the plate it should be returned to the level and allowed to set, after which it is reared up to dry in a place free from dust. After a very little practice it will be found quite easy to coat plates up to say, 12 by 10, large enough for any dark room light. Should the varnish become too thick it may be thinned with a mixture of ether and alcohol or acetone, and wherever one coat is not dark enough it will be easy to give a second, taking care, however, that the first is quite dry. Those who do not care to learn how to coat by pouring on, may apply the varnish with a brush, but the work will not be so fine to look at although equally efficient.

Nor need it be confined to glass; cloth or paper will answer just about as well, and for the coating of either we have found nothing better than a pad of flannel, a pool of the varnish being poured in the centre and rapidly spread by the pad. Such cloth or paper may afterwards be made more translucent by a coating of oil or vaseline without interfering with their non-actinic quality.

Another and most important use for the

varnish is in the backing of plates. One of the many puzzles connected with photography is why, when the effect of proper backing is so well understood, so many photographers continue to use unbacked plates. A single experiment will convince any one of the fact that the detail, the crispness, the beauty and perfection of the image on a backed plate is far ahead of that on an unbacked one; and the application of the varnish is so simple that there can be no excuse for neglecting it. A dozen plates may be backed in almost half as many minutes, and as the varnish dries rapidly, enough for a month's holiday may be backed and repacked in an evening; and when it comes to its removal it practically removes itself, the whole coming off in the form of a skin within a few seconds after being covered with the developer.

Much has been said about the alleged necessity for the backing being of the same degree of refrangibility as the glass, but be that as it may, and whatever the refrangibility of the varnish may be, it does the work as well as any backing that we have ever tried, and we have tried all that are on the market and dozens that never had that honor; while its application is easier and its removal *very much* easier than any. And that easy removal has another advantage, it makes the desire for daylight development possible without further trouble than placing the plate in the tray and covering it with the developer, the coloring matter coming into the solution so quickly and being so non-actinic that white light cannot reach it.

Then those who have electricity laid on, or who bother themselves with storage batteries and small bulbs, have only to dip those bulbs into the varnish, the mouths of the bottles being wide enough for the purpose, to have perfectly safe lights.

Taking it all in all, the Ruby Varnish is one of the most useful things that a photographer could have in his *materia photographica*.

We are indebted to *Photography* for the accompanying cut, showing the results of experiment with Ruby Varnish backing carried out by T. Thorne Baker, and quote his own words as follows:

To show the actual results, I give six photographs, numbered 1 to 6, 1 to 2, 3 and 4, 5 and 6 being comparative pairs. The test employed was a Chapman-Jones sensitometer, a sheet of white paper being laid on the back of the plate during each exposure to facilitate reflective halation.

Figs. 1 and 2 show two plates exposed for thirty seconds at one foot from a standard candle, and developed exactly

alike. No. 1, needless to say, was the backed one. In this case, as in the next, there is no diffusion, because the plate tester was put film to film against the plate, and consequently there was perfect contact between plate and meter. Figs. 3 and 4 are two plates, both abnormally over-exposed (150 seconds), but restrained in development by means of acetone sulphite.

here the advantage of using the varnish is very visible. In Figs. 5 and 6 we have used the plate tester inverted, with the result that the light has diffused freely. But this diffusion, due to non-contact of the "negative" (i. e., the plate tester), and the plate must not be confounded with the irradiation halation apparent in the numbers 1, 2, 3 in Fig. 3.

OFFICIAL NOTICE NO. 2.

To the Photographic Fraternity.

It having reached the ears of several members of the Executive Board of the Photographers' Association of America that the report is going the rounds that there is to be no National Convention this year, owing to its being World's Fair year, and your executive board having planned for a convention that will far surpass any ever given, as the Secretary of said Board I wish to emphatically deny such rumors.

Your Executive Board never knew such a word as fail; in fact, we had to ask a back number photographer how to spell the word, and to the end that our coming National Convention will so far surpass anything ever given, we have secured the Forest Park University Hotel (which is located within a stone's throw of the World's Fair Grounds), to take care of our photographic friends, and in which to hold our meetings.

It is the intentions of the Board that only morning sessions be held and the afternoons to be given to seeing the fair, and visiting the art halls, where we will have capable artists to deliver lectures on the many fine works of art therein.

This alone will be a very instructive feature of the convention and every one will profit immensely by the instructions given.

The greatest National Convention ever held will convene in St. Louis during the first week in October, from the 3rd to the 8th inclusive.

This will be just before your holiday work begins, and you will have every opportunity to gain new ideas and the Lord

treasurer, Mr. Frank R. Barrows, 1877 Dorchester avenue, Boston, Mass., showing that you are a member in good standing. Upon receipt of same you can write to Mr. J. J. Grafton, lessee and manager, care Forest Park University Hotel, stating when you want to come and that you are a member of the Photographers' Association of America; he will then set aside as many rooms as you will want for that week and same will be at your disposal during the convention week. *Under no other conditions will you be able to secure these accommodations*

Bear in mind that the executive board have promised you the grandest and best convention ever held, and to redeem that

FOREST PARK UNIVERSITY HOTEL.

Where the P. A. of A. will convene this year.

GEO. G. HOLLOWAY.

help the fellow that does not try to help himself.

It will be painful for you to have to admit to your artistic patrons that you did not see the works of art at the grandest exhibition of that nature ever held in this country, but by taking in the Fair you can also take in the greatest convention and thereby kill the two proverbial birds.

Rates have been secured at the Forest Park University Hotel which will be much lower than any rate secured elsewhere, but this rate is for members of the Association only.

To secure these rates as well as to secure accommodations in advance for convention week, it will be necessary that you be furnished with a certified receipt from the

promise every member of said board is working night and day to see that same is fulfilled.

Our Official Journal will be a thing of beauty and a joy forever, and woe to the one who fails to receive a copy of same. It will be yours for the asking, if you are in good standing.

There are many things that I would like to say to you this trip, but lack of time and space forbids. However, it is my intention to visit many of the State conventions this year and I will tell you more when I meet you.

With very best regards, I beg to remain,

Cordially and fraternally yours,

GEO. G. HOLLOWAY,

Sec'y P. A. of A., Terre Haute, Ind.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1715 and 1716. C. F. CLARKE.—“The Deserted Hut” and “Autumn.” We make these an exception, noticing both in one month, one set of observations answering for both. And both are fine examples of pictorial photography if any picture can be called fine in which there is not a trace of the needed atmosphere, the distance being quite as sharp and as well defined as the foreground. Nor is the placing of the deserted hut quite as we should like, the horizon line dividing the print in two equal parts, and it is all the more the pity since the sky is peculiarly beautiful. The placing of autumn is better, but we should have toned down the all too flat sky, making it just a shade darker from the zenith down. Judging from the appearance, we are inclined to suppose that a stop too small was employed, and that f-11, or at most f-16, would have given a much bet-

ter result in the matter of atmosphere. Taking them all in all, however, they are, as we already said, excellent examples of pictorial photography of what may be called the naturalistic variety.

1717. W. J. McGuffage.—“Off Escanaba,” a sail-boat within half an inch of the edge of a 6x4½ print is so badly placed that only heroic trimming can make it pleasing. Instead of a nearly square, we should have trimmed it a narrow panel of about 2¼x5, the sky at present, although very good, is much too top-heavy. But for the wrong placing of the boat and the top-heavy sky we should have said it was a really fine representation of “a gray day.” Kindly, in future attend to the instructions at the head of this column.

1718. HERMAN DORNER, N. Y.—“Name Writing to—” is a very good example of “Professional” portraiture, that is, a portrait made to please the sitter, and in which the dress and certain accessories are of more importance than the face of the fig-

ure. The eye is at once attracted and held by the exquisite detail and light and shade of the dress and the cover on the table, and finds difficulty in giving attention to that which should be the objective point of the picture. The fault is in the lighting, too strong on the face and bust, with the result that there is a perfect want of texture in both. We have tried and tried to look at it as a portrait, but each time the eye is, willy nilly, attracted to and retained by the dress and table cover.

probably arising from under development of the negative.

1720. E. G. S., ZION CITY?—(We give the place because we cannot even guess at the name.) The snow scene is far from a success, snow never being properly represented by an unbroken expanse of white paper as it is here; and the subject is such as you would not have thought of photographing but for it. As it is, however, it might have been made a passable photograph. Exposed early in the morning or late in the afternoon when the shadows were long, both of the trees and the inequalities of the surface; and then developed so as to keep the various lights each at its relative density. The other and much better print in our next.

In spite of that however it is just such as is being made by thousands of successful professional photographers and is being paid for and admired by tens of thousands of their customers; and if your aim was no higher than that you have succeeded admirably.

1719. E. L. GRIMES.—The unnamed print is a good subject from an unsuitable point of view, the roadway leading too much in the centre and the masses of foliage on each side too equally balanced so that the print may be cut into two parts, each being exactly like the other. A few feet either to the right or left would have made all the difference. Nor is the photography up to the mark, there being neither light nor shade in the true sense of the terms, nothing but a uniform dark and light gray;

1721. EDGAR COURTWRIGHT.—"A Winter Morning" is considerably better than most of the snow scenes that have come this season although its value is lessened by the printing under a fancy mask which takes the eye up to the top corners making one wonder what those curves are doing there. The long shadows and trodden footpath are the making of the picture and it only needs about an inch trimmed from the all too large and vacant foreground to make it a really good example of snow photography. And good as it is, it would have been very much better if you had gone a little nearer, near enough to give it on a scale a third larger than it is.

1722. C. E. C. K.—You have in the un-

named print an excellent subject although you have not made the best of it. In the first place, the point of view would have been better a little to the right so as to have prevented the all too equal quantity of water on each side, and to have got rid of the larger tree on the right which not only too closely repeats the line of the margin, but is also too strongly reflected in the water. Then, such reflections are always objectionable and should be prevented by disturbing the water just before exposure; an object, the reflection of which is as clearly defined as itself can hardly be considered pictorial in the artistic sense of the word. And, lastly, there are neither lights nor shades in the true sense of the terms, but an almost universal flatness as if from over exposure and unsuitable development. It is, however, as we said before, an excellent selection, with the somewhat rare charm of atmosphere, and probably intensification would give the necessary contrast, and by the trimming off of about three-quarters of an inch from the right you may have a really fine picture.

1723. CARL KREBS.—"Her Valentine," two little girls, one reaching with difficulty so as to drop a letter into a wayside letter box to which we have taken the liberty of

tween her and the box, the cover of which she lifts with one hand while with the other she is about to drop in the letter. The pose of the figure is so good, the placing so perfect, and the effect so satisfying, that one does not think of analyzing it or questioning the arrangement. It is a sepia print on rough paper, a *genre* picture that we like very much.

1724. J. C. VAN NEWKIRK.—"Cheax River." It is difficult to say anything in favor of this composition. A horizon line in the centre divides the print into about two equal parts, which is a mistake to begin with; nor is there anything worth dividing. Above and below that line there is what seems to be a mountain; the mountain itself above and its reflection below and the one is just as well defined as the other. Then, above and below there is little else than white paper; nothing where the sky should be, and the same only a little darkened where there should be water, although that is only guessed at by the reflection; and neither sky nor water are properly represented by white or even slightly shaded paper. But close to the right margin, about the weakest place for the purpose, is a figure and some foliage, enough, with the stones and wreckage amongst which she stands, to have made a picture. You have been too ambitious, have included a large space of, as represented, worthless material, and squeezed into a corner the only matter of value in the composition. But, worthless as it is as a whole, when cut in two, the right half makes a fairly good thing, and would have been altogether good had the lady not been so interested in being photographed; been giving attention to the irregular matter amongst which she walks instead of staring into the camera. The face is no doubt, pretty, but we would have taken that for granted and liked her much better had it been turned the other way.

We know this kind of subject well, one of the most beautiful in nature; but at the same time one of the most disappointing after having passed through the camera.

1725. WALTER D. BROWN.—In what looks like a little church, a tree with perfectly white branches, and a foreground of white paper is the result of 15 minutes exposure to "electric light illumination." The same subject a thousand times better represented could have been got by an exposure of a second or less during the day; and we cannot see why time and good material should be wasted in making a poor thing, when the more valuable item of the

giving this title, is a very satisfactory production in spite of the curious perspective that seems to make her stand on a sidewalk with the whole breadth of a road be-

two may be saved in the making of something really good.

1726. P. A. HESSE.—"Afternoon Shadows" just misses being one of the best snow scenes that we have seen during the winter. The subject, although hardly worth photographing but for the snow, is redeemed by the beautiful shadows at just the right angle; but we never saw snow

as here, cannot be successfully rendered without a full exposure. In speaking of the exposure for such subjects, Osborne Yellott, in the *Photo-Miniature*, says, "The exposure must be full enough to give full detail in the darker objects, and the contrasts must be obtained largely in the development."

1727. F. SOLOMON.—Your "A Southern River" is a charming little picture, too charming indeed to be confined to such a small size, and as it would bear enlarging admirably, you should not rest till you have it up to about 10x8. The subject is beautifully selected and the placing or composition perfect, the only fault being the all too white sky which could be easily toned down.

1728. W. H. LUCKHAUPT. — "Avon Ridge" is an excellent subject from a well selected viewpoint, but the photography might have been very much better. It looks as if taken in the grayest of gray days with neither light nor shade, all one uniform gray tone. Judging from its appearance, we should say that development of the negative had not been carried far enough to give the necessary contrast, and if so, intensification would improve it greatly. "Full opening," in speaking of the lens means very little, lenses in general use varying all the way from f-5, say, to f-16, the one being eight times faster than the other.

so dark unless in the city a day or two after it had fallen, nor trees so black at any time. Intensification of the negative may give a more natural looking print, or even deeper printing as it is, but longer exposure and careful development would have been better than either. Masses of snow with dark trees in or near the foreground

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

Camera Club of New York.

The regular monthly business meeting of the club was held on Tuesday evening, February 9th. President Crosby presided.

The secretary reported for the board of trustees that three active members had been elected during the previous month and two non-resident members, one member had been dropped.

For the print committee he reported that a special exhibition of prints the work of Elias Goldensky was on the walls and would continue until February 27, 1904. The collection comprised fifty prints, mostly in carbon and platinum.

The club then proceeded to ballot for a nominating committee of five members, none of whom should be members of the

board of trustees. Those receiving the highest number of votes were Edward Heim, Harry B. Reid, A. K. Boursault, L. M. McCormick and H. T. Lockwood.

The secretary read a communication from the Missouri Camera Club, No. 1 N. Broadway, St. Louis, Mo., relative to the question of free admittance and use of 4x5 inch cameras without tripods at the 1904 St. Louis World's Fair. The club voted to co-operate in the movement and urge upon the authorities the necessity of such a concession.

A vote of thanks was accorded to Mr. Galipou for his offer to give tickets of admission to members for the International Billiard Tournament soon to be held in this city. The meeting then adjourned.

On February 6th at the Saturday night social entertainment of the club, Mr. D. L. Elmendorf explained the methods he employed in making small pictures suitable for moving picture machines.

On February 13th the annual dinner of the club occurred at the New York Athletic Club house; President Crosby presided, with President Van Wormser, of the athletic club by his side. Among the official guests were President Butterfield, of the Orange Camera Club, and ex-President Plumb, of the same club; Commodore Kane, Dwight L. Elmendorf and others of the New York Yacht Club were present. Impromptu toasts and remarks were made by the two presidents, Mr. Butterfield and Mr. E. Steichen, and others. It was a very enjoyable affair. There were about seventy present.

On February 17th the Interchange slides of the Hartford, Philadelphia and Portland societies were exhibited and were appreciated.

On February 18th an illustrated lecture by Malcolm Stuart on "The Austrian Empire" was given; the slides shown were the work of Mr. Stuart.

On February 23d Mr. Arthur Hewitt gave a lecture on "Here and There in the Life of an Illustrator."

The annual auction sale of the club occurs on March 10th.

The Lantern Slide Cup competition for the "Lantern Slide Champion Cup" closes on March 28th. The cup was presented in 1897 by Mr. Alfred Stieglitz. Slides taking prizes prior to January 1, 1904, are not eligible.

The nominating committee appointed at the February meeting of the club has agreed upon the following ticket to be voted for in April.

President, Frederick E. Ives; vice-president, E. Lee Ferguson; secretary, John B. Kerfoot; treasurer, R. B. Minis. Trustees for three years, Louis B. Schram, A. K. Boursault; trustees for one year, W. E. Wilmerding, Eduard J. Steichen.

The club has just installed a very complete enlarging apparatus especially manufactured by the Folmer & Schwing Mfg. Co., which has been set up in the bromide room. The old condenser has been removed and a ground glass substituted for it. In place of the arc light a Cooper-Hewitt mercury vapor electric light has been installed with a series of tubes arranged to equally illuminate the ground glass 10x12 inches in size, and the negatives are placed in front of it, in a special slide holder the handle of which can be seen in the accompanying illustration projecting out from one side of the rear of the camera. The negative holder has a revolving plate carrier permitting the nega-

tive to be rotated in its same plane whereby an image located on the negative at an angle may be correctly aligned on the screen.

The camera has a rising front and a front focusing thumb screw and shaft which is connected by a bevel gear at the rear with a vertical shaft and a second bevel gear at the bottom to a long focusing shaft that runs between the two enlarging screen ways as indicated by the dotted lines shown in the picture, on this shaft is a good sized hand hold for easily revolving it, and enables the operator when making a large enlargement to closely view the enlarged image and adjust the focus by rotating the long focusing shaft with the right hand.

The large enlarging screen is built up of layers of wood and solidly braced at the back and runs on roller bearings on the parallel ways so that its adjustment to or from the lens is easily and quickly made. It is solidly mounted so that there is no vibration.

The face of the board has spring pressed wood strips for holding the sheet of paper in position instead of the usual thumb tacks. It is a very simple and effective way of holding the sheet. The base of the board has a circular rack on one side for revolving the board in a horizontal plane to compensate for any defective lines in the negative and straighten them on the screen, also there is a worm thumb screw in the base for tilting the board in a vertical plan to enable the operator to straighten any converging vertical lines in the negative.

Every facility is thus afforded for making all the adjustments quickly and with mathematical exactness and without loss of time.

The base of the apparatus is solidly built and the long base board at the bottom affords a convenient place to hold negatives and plate holders. The club is to be congratulated in being able to provide for its members such fine up-to-date enlarging equipment.

California Camera Club.

The California Camera Club has, in sending out the following circular which will speak for itself, introduced a new feature, the adoption of which might be of considerable benefit to other clubs. It is headed "We Want Outing Negatives," and is as follows:

"The outings of the Camera Club have been an important feature ever since its organization. Many members have participated in them from time to time, and

hundreds of excellent negatives secured. It has been suggested that our next Pay Show, to be given in February or March, should be devoted to the presentation of a collection of slides to be obtained from these negatives, and we believe that nothing in the pictorial line would prove more generally attractive.

"If you have participated in any of these outings will you not look over the negatives thus obtained and select such as, in your judgment, would prove of the greatest interest, especially those of a personal and humorous character? Leave these at the club rooms with Miss Voy, with a memorandum showing when each was taken, with such additional data as could be used in the preparation of a descriptive lecture.

"This is a duty you owe the Club, and we trust that you will promptly respond and thus aid in making our coming Pay Show a howling success."

Exhibition of Pictures by Clarence H White in Pratt Institute, Brooklyn.

Photography is steadily forging ahead to its true level among the fine arts, as witness the invitation exhibit of the work of Clarence H. White last month at the Pratt Institute art galleries.

Mr. White is an "impressionist," whose work bears the stamp of originality and sincerity. Its unity of purpose and treatment gives it a distinctly individual character and imparts to it a most marked style. Realists will not admire this style—they will probably condemn his fondness for working in subdued and minor tones, and call his work "fuzzy"—"fuzzy" or not, it is certainly artistic.

"Impressionists," on the other hand, will find it interesting and even masterful in composition. Furthermore, they will see in it the distinct evidence of thought and design. For example: The "Lady with Venus," is clearly suggested by the lines of the statuette, and appears to be an attempt to create a decorative portrait in a firm, forceful, simple manner. His child studies are also excellent and bring out all that delicate imaginary for which Sir Joshua Reynolds was famous.

Now, while Mr. White's prints are interesting, not all are pleasing. Some are hard of line, rough in tone and faulty in composition—yet as these exhibitions are designed to show a man's faulty work as well as his best, there is no excuse for dwelling at length upon his few imperfections.

While some of his pictures fail to excite

more than momentary interest, all of them challenge the respect due to serious and thoughtful work.

Mr. White's work is too refined, too delicate, to appeal directly to popular approval,

but it is nevertheless valuable as an exposition of the more poetic and artistic principles than are shown in the direct reproduction of what is merely obvious to the uncultured taste.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol T'oga Centre, N. Y.

EXHIBITION OF THE WORK OF THE PHOTO-SECESSION.—From a catalogue got up in the style of the Photo-Seceession, which is equivalent to saying that it is thoroughly artistic, we learn that an exhibition of the work of that body was held in the Corcoran Art Galleries in Washington under the auspices of the Capital Camera Club; and if that band of true pictorialists did nothing else than to make such exhibitions possible they would be doing a work for which they deserve the thanks of all who are interested in photography as a means of pictorial expression.

The exhibition includes 159 exhibits by 37 exhibitors, beginning with Abbott and ending with Willard; and although, judging from what we have already seen, there is some of the work above or beyond our comprehension, there will have been much that, had it been possible, we should have gone far to see.

The catalogue is illustrated by Steichen's portrait of Sadakichi Hartman, and readers of *Camera Work* will recognize at a glance that the artist has caught the very soul of this dreamer of dreams. "The Rose," by Eva Watson-Schutze has also been reproduced; and as a study of lines in a decorative panel it will compare favorably with the work of even the most popular artist of the palette and brush.

* * *

A PINHOLE PORTRAIT.—From J. A. Anderson comes a portrait, the result of an exposure of 75 seconds through a needle-hole; and of such excellent technique that not even the oft quoted expert could guess that it was not the product of a lens. Seventy-five seconds, and without a head-rest, is a long time to sit; but, as the gentleman represented observes, while he needed a head-rest at 18 for an exposure of 30 seconds, by 73 he had so settled down as to be able to do without it for 75. The only fault we find with the portrait is the dead black background with its lack of distance between it and the figure. We reproduce it on another page as an encouragement

to those whose finances are below the reach of a lens, although few will be found to sit so long and so steadily as Mr. Anderson without the now almost obsolete head-rest.

We may add that the "pinhole" was made with a No. 11 needle, and that the Cramer crown plate was six inches from the pinhole; and that exposure was made under the bright sunlight of a July forenoon, the figure being under the shade of a tree.

* * *

THE PITTSBURG CAMERA CLUB'S EXHIBITION OF PICTORIAL PHOTOGRAPHY.—We have to thank the secretary of this comfortably situated and energetic club for an invitation to be present at the Press View of this interesting exhibition, and regret, remembering how excellently we were treated on a former occasion, that distance renders acceptance impossible. We have, however, done the next best thing, made arrangements for a report of the show which will be found on another page.

* * *

FROM THE PHOTO-SECESSION CIRCULAR NO. 4.—We gather some idea of the good work that is being done by this band of pictorialists, and have farther proof of the untiring zeal and energy of its director, Alfred Stieglitz. The exhibition of their work at Washington was a decided success, 997 visitors having been in the galleries the first Sunday between the hours of eleven and four. As soon as the Washington exhibition closed the 159 pictures with 153 added, went off to Pittsburg and are now in the Carnegie Institute under the auspices of the Pittsburg Camera Club. Invitations to exhibit, or rather requests for pictures have been received from Haarlem in Holland. The Salon committee of the Photo-Club de Paris, and Bradford in England, and the Secessionists are requested to "get busy" getting something new for all.

With a view of bringing the Secessionists more together a monthly dinner has been inaugurated, the first of which came

NEEDLE HOLE
PORTRAIT.

By J. A. Anderson

off on January 12th, and was a decided success. It may not be generally known that while, of course, the bulk of the work exhibited by the Photo-Secession is that of its members, it is not altogether confined to it as will be seen from the following extract from the circular. "As has been customary with the Secession at all important exhibitions under its management its work shown, though limited to American photographers, included that of prominent workers not within its ranks." Those of our readers who come within that category, and we know that there are a goodly number although they may as yet be too modest to apply for admission, should bestir themselves and send examples of their work to the director on the chance of its being accepted, as, in our opinion, no higher honor is obtainable in the ranks of pictorial photography than what is implied in such acceptance.

* * *

THE PHOTO-MINIATURE No. 57 deals with "Winter Photography," passing lightly over the many things that may be done during the winter, there being no time for them in the summer, and devoting most of its space to the photographing snow scenes. Osborne I. Yellott is the author, and he tells not only how he does it, but how it is done by many others; leaving the reader, like the showman who when asked which was Napoleon and which Wellington, replied, "Which you like my little dears." Boiled down, however, it comes to the old, old story, "expose for the shadows" and look after the lights in the development. He recommends backed orthochromatic plates, although curiously enough because most certainly not correct, he says, "For rapid exposures, say 1-25 of a second, or under, backing is really not necessary." Both theory and practice say most emphatically that any exposure that

is sufficient to produce a latent image is sufficient to admit of the light reflected from the back to get in its halating work.

Tank development comes in for a well deserved share of praise, as for certain subjects, the weak image so produced strengthened by local development, gives better prints than can be made by any other method. The pinhole, for snow scenes also gets a good word, as of all the 96 experiments recorded on page 424 it gave the best picture.

Taking it all in all, the Photo-Miniature No. 57 contains all that need be known of snow photography, and the photographer who cannot make a good snow picture from its instruction is unworthy of the name. The only fault we find with it is the use of the meaningless and now obsolete U. S. numbers, although the author generally follows them by the focal fraction they are intended to indicate. They are both meaningless and useless unless their meaning is committed to memory, that is their relation to their focal fractions known, while the focal fraction tells at once all that it is necessary to know.

* * *

WITH THE CAMERA, the monthly circular from the Illinois College of Photography, has less than usual of general interest being mainly accounts of the coming of former pupils, either on friendly visits or for further instruction; although a pleasing feature are the many notices of the success of the college graduates both as assistants and on their own account. The college authorities are looking forward to the meeting of the National Convention to be held in St. Louis in October, when they expect a grand reunion of former pupils; and they are not likely to be disappointed as the more one knows the more anxious he is to learn at conventions and elsewhere.

LETTERS TO THE EDITORS.

Communications to the Editors, articles for Publication and everything connected with the reading matter of the Magazine to be sent to Dr John Nicol, Tioga Centre, N. Y.

On Things in General.

Dear Sirs—I receive your magazine regularly from the stock dealer and find many good things in its pages. Your article on Exposure in the January number meets with my hearty approval, as we do quite a lot of work for amateurs, and when we get a batch of plates to develop from those

snap-shotters we are in a quandary as to how to bring out even a trace of an image. The idea of making snap shots with a cheap lens working at f-16 under circumstances that with a modern lens working at f-6, 8, at least five times faster, would require from 1-25 or 1-2 a second, and in dull days considerably more, overtiming being easily

made right by development with weak solutions.

But undertiming is not confined to the snap-shotting amateur, as notice in nearly all the photographic magazines that reproduce prize pictures that they are undertimed, the high lights being dark, especially the faces in portraits and groups, while the children, with their delicate complexions and beautiful hair, are more like Indians or Mexicans, and the lens run out of focus makes the hair all run together; and still they call this pictorial photography.

I admire true pictorial work as much as any one, but when it comes to the trashy hazy stuff turned out by some of our amateurs, I do not want to have anything to do with it. I met a friend the other day who has become affected with the Secession craze, and he handed me a large head of a little girl with beautiful curls, saying, "what do you think of that, isn't it a prize winner?" to which I replied, "it is horrible! not fit to be shown to any one but a crazy amateur who knows no better. You have two beautiful children, shall I bring over my camera and make pictures of them just in that style? All that is necessary is to put the lens out of focus and very much undertime the exposure and there you have it?" After thinking over the matter for a while he replied, "not on your life, if you want to make anything but a likeness," and his wife told me afterwards that on going home he threw all his valued pictorial Egyptians, Indian-Mexican Maidens into the fire, vowing that henceforth he would do only good work that he would not be ashamed to deliver.

It is amusing to see how amateurs laud each new developer when you know that there is only one developer, the good old stand-by, Pyro. Of course the amateur says it is dirty and filthy, and stains his fingers, and we are quite willing that he should use any of the others, but for good true work there is nothing like the Pyro. I send you my formula, although I don't want it published; and with it and suitable exposure you can make negatives that for beauty and printing quality cannot be surpassed.

In confirmation of your recent article on Window photography, I send you a photograph of a young lady violinist taken at her home, which shows pretty clearly that a studio is not absolutely necessary for fine work. Respectfully yours, S.

[Our correspondent, a successful professional photographer, voices the opinion of a large number of his class, and it is only natural. With a clientele whose object is

a likeness, often quite as much of the dress and its appurtenances as of the features; and with whom technique and "finish" is the test of excellence, it could hardly be anything else. In photography perhaps more than in anything else the demand leads or influences the supply, and it will be long before the ordinary visitors to the photographic studio shall be satisfied with the work of the extremists of the pictorial school.—Eds.]

Regarding Flat-Field Lenses.

Dear Sirs—With modern corrected lenses the focal plane is understood to be flat, with correct definition toward the edges with the largest aperture. How far is this true for very near objects

For instance. With an eight-inch lens and a seven-inch plate, and the image focused full size, object and plate are each 16 inches from the optical centre of the lens and the ends of both 3.5 from the centre. Hypotenuse of triangle having sides 16 and 3.5 being 16.38 as distance of object and plate at the ends. Conjugate foci of 16.38 being 15.64, the latter is .74 from end of plate, hence confusion without severe stopping down. Is this the correct view?

J. A. ANDERSON.

[A lens under the conditions suggested by our correspondent is practically stopped down to one-fourth of the area at which it works when focused for practically parallel rays, f-4 say, becoming f-8, and requiring just four times the exposure. But perhaps some of our readers who are also mathematical opticians will kindly figure the matter out mathematically for the benefit of our correspondent and others who may be equally interested in the subject.—Eds.]

The Bausch & Lomb Competition.

Rochester, N. Y., Feb. 9, 1904.

Dear Sirs—I have just received a copy of the AMERICAN AMATEUR PHOTOGRAPHER for November, 1904, and note your review of the souvenir, so I am going to impose on your good nature a little with an explanation regarding the comment which you make on the number of pictures in the souvenir produced with Plastigmat. You say: "Next comes the Plastigmat with only nine, at which we are a little surprised knowing as we do the exquisite work of which it is capable, both in double and single form." I think the number of prints in the competition is easily explained from the fact that we have been making rapid rectilinear lenses for twenty-five years, and

they are supplied on practically every hand-camera made. Prints from these lenses were all eligible in our competition. We have been making the Zeiss convertible lenses for eleven years only, as these lenses were placed upon the market through us in 1892, and the Plastigmat was patented October, 1900, but was not placed on the market until June of the following year, so that it has practically been known to the public only a little over two years. Such being the case it would not seem strange that there are a great many more prize winners with the other lenses than with this very new objective.

In another paragraph you say: "Rapid Universal is credited with seven, Single Lens with two, and the Zeiss Convertible Protar with Telephoto Attachment with one each."

There has been some confusion in regard to the use of the term "Protar," and I think it might be interesting to explain it. The term "Protar" is a term which has been copyrighted by Zeiss, and which is applied to all of their earliest types of anastigmatic lenses. Zeiss was the first to use the term "anastigmat," and had intended to employ it as a copyrighted trademark designation for their new improved construction. It was decided by the courts that such a word could not be used in this connection. Later on, manufacturers finding that the Zeiss anastigmats had attained such enormous prestige employed the term "anastigmat" in connection with lenses not at all anastigmatic, and the term became so common as to really mean nothing. For this reason Zeiss decided to coin a new term which would be applied to their lenses and which could be protected by copyright, and which would mean to the public, lenses of anastigmatic construction and perfect optical correction, so that now what were formerly the Bausch & Lomb Zeiss Series II, IIA, III, IIIA, IV, V, VII and VIIA Convertible Anastigmats, are the Bausch & Lomb Zeiss Protar Lenses of the same series.

There is another little point that might be of considerable interest to your readers, and it certainly is of interest to the photographic trade, that is, the designation of Zeiss lenses manufactured by ourselves and by others. As you are doubtless aware, the firm of Carl Zeiss, after having completed their series of anastigmats, placed the manufacture of them for various countries in the hands of the most competent manufacturers to be found in the respective territories, the Bausch & Lomb Optical Company being the firm selected for America. The optical formulæ and a sample set

of Zeiss lenses were placed in our hands with instructions as to the methods which Zeiss had employed in producing them. We were required to make a sample series which were submitted to Zeiss for approval, and it was a condition of the contract that we were not permitted to make these lenses unless they were found, upon being tested at Jena, to be equal in every respect to those produced by Zeiss themselves, as it was the determination of Doctors Rudolph and Abbe not to permit the sale of Zeiss lenses, under any conditions, which would not equal the standard which they had set for themselves. When we received these lenses from Zeiss, we found that it was possible to make very decided improvements in the mountings of the lenses, both to secure compactness and convenience in the use of the lenses, and the mountings in which the Zeiss lenses are sold in this country are entirely our own, and are conceded to be a great improvement on any lens mountings heretofore produced.

For this reason, and to identify our product, we have used the designation, "Bausch & Lomb-Zeiss." It is therefore just as improper to refer to a Bausch & Lomb-Zeiss Protar as a "Zeiss Protar," as it would be to refer to a "Carl Zeiss Protar" as a "Bausch & Lomb Protar." It seems to us that accuracy in photographic nomenclature is just as desirable as it is in the nomenclature of any other art or science, and that it is therefore desirable to keep coaching the public along these lines.

We note that you refer to the grand prize as \$100. The grand prize was \$300, and the first prize in each of the other classes with the exception of one or two minor classes was \$150 cash.

In regard to your very interesting notice of the *Journal of Applied Microscopy and Laboratory Methods*, you will be pleased to know that since the publication of the photograph of our editorial staff, Miss Agnes M. Claypole has ascended again the pedestal upon which nature has placed her, and has taken to herself a husband. With kind regards, I am, yours truly,

L. B. ELLIOTT.

[We are particularly pleased with the last paragraph of this interesting communication. It may be that we are, as we are often told, old-fashioned and behind the times, but we believe it will be a sad thing for any country when its women descend from the lofty pedestal on which nature has placed them and leave the high and holy work which only they can do for work that can be done, at least, equally well by men—Eds.]

ANSWERS TO CORRESPONDENTS

Questions for answer, matter for publication, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

Formula for Edinol Developer.

W. S. BURTON.—You attach too much importance to formula, a grain or two out or in is of no consequence, although, as a rule, we prefer weak rather than strong solutions. While the formula you enclose, that of the maker of edinol, works admirably it is a little too fast for us, and we prefer the following, using it for almost all purposes.

Edinol.	30 grains.
Acetonesulphite.	150 grains.
Sodium carbonate (crystals).	150 grains.
Water.	10 ounces.

This we use on plates films slides and paper and for all it leaves nothing to be desired. If, however, you care to experiment you may dissolve these quantities in only five ounces of water, it keeps well, and add various quantities from equal parts down, you may find a strength that suits you better, but we like to go slow and sure.

Silvering Mirrors.

MARTIN DOSCHER.—The formalin method of silvering mirrors, full instructions for which will be found on page 84 of our number for February, 1903, although more costly in silver, gives a better and more durable deposit; one that will bear repolishing more frequently than that by the older method. The solution is prepared as follows. Dissolve 25 grains of silver nitrate in an ounce of distilled water and add strong ammonia drop by drop till the precipitate first formed is dissolved, being careful not to add more than is required. Into another glass place 74 minims of formalin, and pour the silver on it, pouring the mixed solutions backward and forward several times to make sure that they are thoroughly mixed, and then at once pour them on the plate to be silvered, rocking the dish the while.

There are so many formulæ for silvering mirrors by the old method that we cannot know to which you refer. The following, however, is good, but both the distilled water and the caustic potass must be pure. You know, of course, that the glass must be chemically clean.

A. Silver nitrate.	175 grains.
Distilled water.	10 ounces
B. Ammonia nitrate.	262 grains.
Distilled water.	10 ounces.
C. Caustic potass.	473.5 grains.
Distilled water.	10 ounces.

D. Sugar candy. 219 grains.

Distilled water. 5 ounces.

Dissolve the sugar in the water and add 50 grains tartaric acid. Boil in a flask for ten minutes, and when cold add one ounce of alcohol and sufficient water to make 10 ounces, and filter.

For use take equal parts of A and B in one measure and equal parts of C and D in another and mix them well; suspending the plate over and in contact with the solution in the ordinary way.

While with this you will doubtless succeed, we think, that on the whole you would be better to stick to the formalin formula that gave such good results, even although a little more costly in the matter of silver.

Milton Waide's Book.

W. H. BLACAR.—We are sorry that you did not find the book so helpful as we had expected as although there may not be much that is really new, the methods of a successful operator are always interesting. This applies especially to pages 17, 18 and 19, not so much perhaps for what is actually said, but for the train of thought suggested and even to the amateur we still think the book is well worth the money.

H. W. DURGIN.—See answer to W. H. Blacar, who writes in almost exactly the same terms as your letter. We may add that we have carefully gone over the book again and cannot understand how even an amateur can read and study it without learning something worth knowing.

Formula Again.

(Mrs.) W. L. SANDERSON.—If you had given half the time to *thinking* that was occupied in finding fault with us and our contemporaries for the way in which some formulæ are written you would have seen that *one* unit in one formula is better and more easily understood than several; and in all the three you dislike and reprobate; parts, grains, and cubic centimetres and grammes, the unit running through the various ingredients may be taken as anything depending on the bulk of the solution required. If you are an attentive as well as a constant reader you will know that we have frequently pointed out that the gramme and the cubic centimetre are near enough alike to be taken as the same, and that they and the grain and the part may be grains, drachms, ounces, or indeed anything else so long as the same quantity

is continued throughout. Another thing, as a "constant reader" you should have learned, the little importance that is to be attached to a few grains out or in in any formula, and not to trouble yourself whether the ounce is the old and obsolete apothecary's or the more modern and indeed only one of 437.5 grains.

Trouble in Copying.

G. R. WILLIAMS.—It is not "something wrong" with either the camera or the lens that you cannot get a sharp focus in trying to copy to the size you want, but the draw of the camera is too short for work that it was not intended for. You must either shorten the focus of the lens by the addition of a supplementary or lengthen the draw of the camera, but we cannot, as you request, tell you how to do either without knowing both the length of the camera and the focus of the lens.

A Moot Question.

MILTON HARVEY.—There is nothing to choose between any or all of the four lenses except that No. 3 is longer in focal length than the others and in consequence better for your purpose. The camera is simply a matter of taste, but the reversible back of D is a decided advantage. Thanks for appreciative paragraph although it would do us more good if told to others rather than to ourselves.

Air Bubbles in Lenses.

(Mrs.) H. E. DRUMMOND.—A gift horse should not be looked at in the mouth. We can assure you that the lens was not cheaper because of the "spots" on the front of the combination. They are air bubbles, a thing that cannot be avoided in the manufacture of some kinds of the most valuable glass, and do not in the slightest degree interfere with the performance of the lens. The "Optician," whose opinion you quote, is either ignorant of the first principles of his profession or dishonest enough to tell you what he knows to be untrue.

The Man Behind the Gun.

ALPHA.—None of the lenses mentioned will make a pictorial photograph unless the man behind it knows how to make it do so: and any one of the four will obey his behest as well as any of the other three. No. 4, however, has one advantage over the others, it, at full aperture, will be twice as fast.

Crystoleum Painting.

BERT HEALY.—We fear you will not succeed with solio but you may try, prints on

albumen paper are the most suitable; and there are various methods the choice depending mainly on the size of the print. With small prints, generally placed on the concave side of a concavo-convex glass that can be bought for the purpose; the print, after being trimmed to the exact size, is coated on the film side with any suitable paste, starch, gelatine, gumarabic, or perhaps best of all, Higgins' or Carter's mountant; and after it has become limp, carefully applied to the concave side of the glass, rubbing with the finger or a pad of cotton to secure optical contact and freedom from air bubbles. When perfectly dry, the paper may be removed by gentle and patient rubbing with the wet finger or the finger covered with wet wash leather till nothing but the film is left, after which it may be colored on the back by either oil or water colors. Instead of rubbing away the paper it may be rendered translucent by a coating of Canada balsam thinned with turpentine, which, although not so brilliant in the result, does very well indeed; and the brooch or whatever it may be, is generally finished by filling up with plaster of Paris.

Larger prints may be managed as follows: Prints and glass are both immersed in a solution of gelatine, about ten grains to the ounce, and plate and print drawn out together so as to exclude air bubbles. As much of the adhering gelatine as possible is blotted from the back of the print and the squeegee applied to bring print and glass into optical contact. When dry all superfluous gelatine is removed and the balsam and the oil colors applied as before. Such pictures are best backed with stout cardboard and bound with strips of paper or bookbinder's leather like lantern slides.

See "Contribution Box" on another page.

Backing for Plates.

MAXIMILIAN JAHNELKA.—There can be no better backing than that you mention, a suitable mixture of caramel, sienna, alcohol and mucilage; but the mucilage should be made with dextrine instead of, as usual, with gumarabic. Such a backing, if thoroughly dry before packing, will have no injurious effect on the plates packed face to face. We should, however, wrap each four in separate pieces of thin paper so as to lessen the chance of movement with consequent abrasion and dust getting in between them. Backing being one of the "Trinity of Technique" running through our pages, all that is known about it shall be fully dealt with shortly.

1 OZOTYPE PORTRAIT OF
ADMIRAL MELVILLE.

E. Goldensky.

THE
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ENLARGED PAPER NEGATIVES.

ALTHOUGH, at the time of writing, the snow lies deep and locomotion altogether on "runners," by the time it reaches the eye of the reader many of them will be beginning to plan for the season; and as photography, like most other things, is more or less influenced by fashion, some may be in doubt as to what those plans should be. Our advice would be the application of the good old rule in whist, "When in doubt play trump," and our trump card the making of small negatives from which to produce enlarged negatives on paper.

While readily admitting the beauty of small photographs, even down to quarter-plate, and that they are not always overlooked by exhibition judges, it must be admitted that they are heavily handicapped by those of larger sizes; and for decorative purposes they make a poor show. Where only one

copy is required, although such cases must be rare, a really good bromide enlargement might answer the purpose as well, and cost less both in time and trouble. But *really good* bromide enlargements are, according to our experience, and we have done a good deal at both, are not so easily made as good enlarged negatives on paper, while he who possesses the latter has the power to produce an unlimited quantity of enlargements by any printing method that best suits the subject.

Taking it for granted, then, that the enlarged paper negative is to be the order of the day, the first step is the production of not only a good but a suitable small negative, as upon both its quality and its suitability will depend the quality of the resulting enlargement. It is sometimes said that any negative that will give a good print will give a good enlargement.

but that is not altogether true, as the light by which printing may be done can be made to penetrate lights dense enough to be quite opaque to the light employed for enlarging, 4x5 is a common and convenient size, but they may be either larger or smaller, 3¼x4¼ being more generally employed in Britain by those who make small negatives for enlarging. Whatever the size, the negative should be full of detail and steep in gradation; exposure full enough to admit of complete development with nothing but the highest of high lights, if such there should be in the subject, anything like opaque. "Expose for the shadows and let the lights take care of themselves" won't do for negatives intended for enlargement, it must be expose for the shadows and *take care of the lights by development*. Nor are all subjects equally effective when enlarged. The "beauty of simplicity" applies, if possible, more to the enlargement than to a print from the negative from which it was produced, and should influence selection accordingly.

A suitable negative obtained, and no pains should be spared to make it so; the next step is to make a transparency or positive from it. This may be done by "contact printing" on an ordinary plate, the slower the better, Carbutt's "B" does very well; but our preference and that of most others is for carbon tissue, that known as "special transparency," as being not only simpler but also giving a more delicate and altogether better positive. For this purpose the negative requires a "safe edge," a narrow line of black or opaque painted round the edges, a strip

of lantern slide binding doubled so as to be on both sides of the plate answers well; and the tissue after exposure, which is about the time required by printing out paper and easily ascertained, is moistened, squeegeed on to a piece of glass free from markings of any kind and developed by immersion in warm water.

So far all is plain sailing with everything easily within the ability of the average amateur; and the next step is to decide as to the size to which he shall enlarge. If his ambition does not go beyond 8½x6½, a fairly good size for many purposes, the recently introduced Kodak Enlarging Camera will answer his purpose admirably, as it really leaves nothing to be desired. Or should economy be an object or he wants a larger size, 14x12 say, which is effective, he may make or get made a box that will answer the purpose quite as well for a dollar or two. Just how best to make such an enlarging camera will be found on page 250 of our volume for 1900, the June number; but for those who have not or cannot get that we shall in our next repeat the instructions with some improvements.

We are aware that to those who have not tried enlarging or seen enlargements from their own negatives, the method seems beset with trouble and uncertainty far above the value of the result, that in fact the dance is not worth the candle; but a few experiments will open their eyes to a degree that they do not expect, and give them a new interest in photography; changing the careless snapper into an acceptable Salon exhibitor.

**OZOTYPE PORTRAIT
ADOLPH GRANT.**

E. Goldensky.

EXHIBITION OF PHOTOGRAPHS BY ELIAS GOLDENSKY AT THE
NEW YORK CAMERA CLUB, FEB. 10-27, 1904.

It was Thomas Carlyle, we believe, who said the best pictures for one's walls were portraits, probably an expression of a similar idea to that which was in the mind of the philosopher who said that *man* was the proper study for men. But we need to have the portrayal of *character*, and not of new suits, chairs and backgrounds, if portraits are to be generally interesting and ultimately prized.

Elias Goldensky, a professional photographer of Philadelphia, belongs to those camera workers who—still small in numbers, though steadily increasing—have realized the advisability of a cautious departure from the stereotyped portrait, *the usual thing*, and who, in the ordinary commercial way, have been tentatively shown and executed work of a superior order. The spirit in which a critic approaches the work of a professional photographer is naturally an entirely different one to that displayed in judging the ambitious efforts of an advanced pictorialist. The latter is supposed to adhere to the principles of art for art's sake, while the professional photographer is continually hampered in the execution of any higher and more artistic qualities, that he may be striving for, the trammels of livelihood necessitating caution and a frequent giving way to the wishes of the sitter.

Recognizing that practical examples are better than, or at least as valuable addition to, theories, and with a view of suggesting the line which may be

taken by the worker anxious to move in the right direction, we will first dwell upon the general aspect of the exhibition, and thereupon analyze the merits and shortcomings of several portraits which Mr. Goldensky has kindly allowed us to reproduce.

The quality of the fifty prints exhibited was a very uneven one. While some were artistic in intention and delightfully unconventional in effect, others were so unsatisfactory in conception and treatment that the exhibition as a whole would have been greatly improved if the latter had been kept out of sight. I particularly refer to the big ozotypes of "Admiral Melville" and "Adolph Grant." Also the framing was very objectionable in parts. I am surely no advocate of the elaborate mounting as practiced by certain pictorialists, but neither am I an admirer of lumber exhibits. The majority of the larger frames were entirely too heavy for a photographic print, no matter of what dimensions. A slender unpretentious frame, surmounting a mat of say five inches, constructed of three mounts, of which the middle one is merely a narrow, darker line breaking the monotony of the other two mounts of the same color, seems to me after all the most satisfactory way of framing an ordinary photograph. Several of the platinums were framed in that simple fashion, and made by far the most favorable impression.

The merit of Mr. Goldensky's work lies largely in the fact that it is devoid

ISRAEL ZANGWILL.

E. Goldensky.

of ordinary studio characteristics; that is to say, it does not at all depend on painted background and photographic accessories, and their good qualities are therefore quite within the reach of the ambitious amateur as well as the progressive professional. He is very fond of special methods of lighting, of side light from various angles, of light from the back, from below or reflected by mirrors, and in most cases succeeds to concentrate the main interest on the face. His composition lacks variety, but is, as far as it goes, skilfully handled. His poses are natural and his arrangements of drapery and folds in no way obtrusive or artificial. He endeavors to break away from the mounting of coats, trousers, and gowns, not by throwing various things over the sitter's lap and shoulders, as Mrs. Gertrude Käsebier is wont to do, but by subordinating and darkening them into masses of shadow. He also takes full advantage of the hand as a medium of expression, in several of his portraits the hands have been allowed a place second only to the head itself.

His portrait of "Israel Zangwill" is one of the strongest pictures in the exhibition. It is a straightforward likeness, and conveys an accurate idea of the sitter's personality, without embodying any individuality of the photographer. The latter is not meant as a depreciation; a portrait, a photographic portrait, at least, should be always first of all a likeness, as interesting it may be at times to see a personality delineated as another personality sees it. The light, concentrated on forehead, nose and cheek lines, leaving

the lower part of the face in shadow, is well arranged. A little more suppression of detail might have been desirable, the glaring white of the collar in particular is distracting and might have been subdued by means of a screen.

A very interesting and original platinum print was the portrait of Miss Katherine Grey. Its very unpretentious subject, its utter lack of prettiness, its simplicity of treatment, with its delicate modeling of half tones in light tinted grays, appealed to us very strongly. A feeling for tone and quality was more apparent in this print than in any other of Mr. Goldensky's efforts. The poise of the head, almost a profile, and the line of the neck are exceedingly beautiful. The background is in this instance not a dull surface, but full of subtle gradations, which cause it to become essentially a part of the picture, and not an indifferent accessory. And how skilfully the outlines of the hair are lost in the background. The dress in front is a trifle too obtrusive, but with this one exception the picture is a perfect harmony in gray, which is even carried out in the framing.

A noticeable print, a platinum on tissue, was also the portrait of Miss E. W. The shadow on the lighted side of the face and the splotch of light at the nape of the neck are accents that strongly enhance the simple and harmonious composition. The critical lady friends of the sitter might perhaps complain of the big bow which is drawn somewhat out of its trimness, but the way in which it is suppressed will attract attention at once of those

MISS KATHERINE GREY.

E. Goldensky.

students critically noticing these portraits. The tone qualities of this picture are peculiarly pleasing, only the retouching in the background is too visible. The disregard of such minor details is a charge to which few of us are not open at one time or another, but which is none the less reprehensible. If a picture be worth finishing it should be finished in the most perfect way possible.

Although fascinated by the technical side of his work, and studying all the time to arrive at more perfect results, one feels that he tries hard to develop an individuality in his work. One realizes that in his studies of old men's heads and Indians. He endeavors to make them more than mere imitations. This has led him to much experimenting and many failures, but he should feel amply repaid by getting now and then a successful negative like the accompanying "study."

That is portrait photography. There is no transfiguring, magnifying and generalizing of rectity. Exactitude is in no way violated. He is all there, with his unshaven face, his wrinkles and the dull look in his eyes, so characteristic of old men. The features are all clearly distinguishable and well modeled, without disturbing the tonal quality of the print. The blacks are soft, and the strongest high lights not a glaring white, but cleverly subdued to a light gray. The face large, as it is, is well placed. The well rendered values, the pleasing textural quality of the print, the fine suggestion of color in the flesh, without actual color, all go together to form a striking ensemble in this study.

Mr. Goldensky is very fortunate in

the choice of his subjects in these studies, but he does not always succeed in making the best use of his opportunities. We feel this in his "Two Old Hebrews Reading." The two figures are well enough posed, but the hand on the table is absolutely shapeless, and the hand holding the stick not altogether pleasing. He also should strive for a softer, less wiry effect, in his beards.

His "Francesca de Rimini" is a light experiment pure and simple. It is difficult to state where the light comes

STUDY OF A CHILD

E. Goldensky.

from. Is it flashlight, or does the light come from below! Perhaps it is side-light which is reflected from below. The face clearly shows that it is lighted from below, but why is there a touch of light on the top of the hat, and an absence of light on the collaret? Surely a white collar reflects light more readily than anything. But the light

CHARACTER STUDY.

E. Goldensky.

there probably had too much prominence and interfered with the face. So the artist subdued it, and in this lies the fault of the picture. It becomes necessary to *seek* the reasons for these varied and conflicting lights, and a picture should always explain itself. To make such experiments may be very interesting to the photographer, but proves rather irritating to the beholder.

Also his study of a child is a little bit restless and lacks in concentration, but is in all other respects a charming piece of work. It is the photographer's most *picturesque* effort. The turn of the head and the sketchy treatment of the hair give an animated character to this portrait. The spot of black (perhaps an accident) on the left side of the hair is particularly fortunate, it lends a strong emphasis to the face, and the entire picture would change if it were

taken out. The folds of the dress could have been more tastefully arranged, but the figure is so delicately rendered, and the whole thing kept so perfect in character, that we overlook any minor shortcomings. It possesses a charm and fragrance that is as rare in child portraiture as it is original.

What has struck us most favorably in all of Mr. Goldensky's work is his skilful use of the simplest materials. It forcibly reminds me of H. P. Robinson's remark in his little book, "Photography As a Business." He says, speaking of studio arrangements: "Of course, there should be no column or any composite monstrosities to give false help in posing. If you cannot make your sitter look natural without artificial support, you do not know your business."

SADAKICHI HARTMANN.

THE TRINITY OF TECHNIQUE—IV.

Orthochromatism.—*Continued.*

BY DR. JOHN NICOL.

ALTHOUGH the amateur has always led and the professional followed in most of the improvements connected with photography, the demand, in the matter of plates at least, must be with the latter; and they who know the conservatism of the professional will be slow to answer the query contained in the last paragraph of my article on this subject in the last number. "Give a dog a lead name, etc.," and orthochromatic

plates at first deserved and got that. They did not keep beyond a few days and consequently had to be orthochromatized by the user by immersion in the dyes and drying, a method both risky and troublesome, so that there is little wonder that they did not "take." Then, the dyes were little understood, two or three at most being known to produce orthochromatic qualities, and even they were in different places known by different names, so that one

PORTRAIT, MISS E. W.

E. Goldensky.

never knew when he had got the proper thing nor could depend on getting the expected results. But all this was changed long ago. Eight years ago, in the May number of this magazine for 1896, I had reproduced a print, "The Path Through the Woods," from a negative on a Carbutt's orthochromatic film six and a half years old; so that at least as early as October, 1889, orthochromatic films with excellent keeping qualities were on the market.

If it be true, as Oakley Norris said in the number of the journal already mentioned, that "While under no ordinary circumstances occurring in general practice can an ordinary plate be made to do more than an orthochromatic plate, on the other hand, an orthochromatic plate can be made to do more than is possible with an ordinary plate, and in addition to that, if the orthochromatic in all other desirable qualities be in every respect equal to the ordinary, surely nothing short of mental blindness can account for the professional photographer continuing to use the less perfect article when that which is more nearly perfect is within his reach. With the modern rapid lens and the orthochromatic rapid plate there can be no objection to the employment of a color filter sufficiently dark to reduce the more active blues to something approaching their visual luminosity, even in the studio; and if the professional would only cease to demand the ordinary plate it would soon cease to be made, and we should be brought one stage nearer what has elsewhere been called the golden age of photography, a condition to which the perfection of technique is essential.

In my last I said the plate makers were leading the plate users, but if the professional photographer knew his own interest sufficiently the demand would soon lead the supply. Not the least of the advantages arising from the use of a correct color plate would be the less need for the abuse of the retouching pencil. Red cheeks and redder lips would appear in their natural luminosities instead of being buried under a mass of lead giving the appearance of textureless china, while the golden locks and auburn hair, instead of their usual cimmerian shade, would be rendered so as to unmistakably suggest their natural hues. Nor need they always use the color filter. Where very short exposures were essential the orthochromatic plate could be used without it, and even if it were true, which it is not, that without the screen it is no better than the ordinary plate, he would be no worse off than now, with the knowledge that *when* color correctly rendered was an object he had the power to so render it.

But, as already said, the professional, even where his own interest is concerned, is slow to move; and therefore all honor to those plate and film makers who have placed orthochromatic plates and films on the market and, in a sense, forced them on the attention of the users. Carbutt perhaps, in this country, led the way, followed by Cramer and others; and now more especially the Eastman Kodak Company with its all over the world connection, and its Kodiod plate and N. C. Film as missionaries, are doing much to convert photographers from the errors of their ways.

**A DIFFICULT
PROBLEM.**

E. Goldensky.

FRANCESCA DE RIMINI.

E. Goldensky.

CONCERNING LENSES.

BY JAMES THOMPSON.

To forestall an accusation of prejudice, or the envy of inability to possess, let me say that I am the owner of two most excellent anastigmats, one of over 17, the other of 9 inches equivalent focus, and that as I like to possess things that are beautiful, especially when they are examples of the highest degree of human handiwork, I would not exchange them for ten times their cost if they could not be replaced. It will be understood, therefore, that in writing what follows I do not mean in the slightest degree to undervalue the modern flat-field lens, as for scientific and certain other purposes it is pre-eminently useful.

In dealing with lenses now, however, I wish to do so solely in their relation to pictorial work, with more than half an inclination to exclude architecture; and therefore it will be no surprise when I say that I take issue with the two catch sentences, "It's all in the lens" and "ninety-nine per cent. of camera value is in the lens," in the advertisements of two of the makers of lenses that for scientific and certain other purposes are second to none. The modern anastigmat, although it has reached a degree of perfection beyond which it seems hardly possible to go, may be said to differ from the ordinary lens (and under that title I include all the lenses, both single and double, that preceded it so long as they were as far as then possible corrected for chromatic aberration and with the

chemical and visual foci coincident) in only three qualities; flatness of field with equal definition all over the plate; more perfect definition; and a larger working aperture or greater rapidity. But it differs also in price, costing very much more, a fact that urges me to give the comforting assurance that for purely pictorial purposes the cheap lens is as good, and for some of them better than the dear one.

And first, as to definition. The days of the sharp picture are gone, diffusion, either by putting even the cheaper lenses slightly out of focus or by other means, having taken its place; and with the recognition of the value of diffusion came also the recognition of photography as a means of picture making. We are told that one element of the pictorial is the accentuation of the objective point or principal object of the composition and the subduing of all else, and surely that is easier accomplished with a lens admitting of partial focusing than with one that insists on equally perfect focus all over the plate. Again, in street work the round field lens has a decided advantage. Here unequal focusing is not desired, and with the flat-field lens the buildings on either side are more or less blurred, while that with the round field gives them more as they are wanted.

On the question of rapidity the anastigmat has the advantage, but does the true pictorialist care for that? I

opine not. A doublet working at f-8 or a single lens at f-16, with the rapidity of the modern plate will do all that he can want, the "breaking wave" and the "moving shadow" being quite within their compass, anything faster showing "arrested motion" rather than giving the appearance of and suggesting action.

Be not discouraged, then, you with the shallow purse. The single lens for all landscape work, and the doublet

where there are straight lines, will, if you know how to do it, make in every respect as good pictures as with the same knowledge you could make with the far more costly anastigmats. Although I possess, as already said, two splendid anastigmats and am proud of the possession, my best pictures, those, which have been honored in more Salons than one, were all made with a single lens, of 16 inch focus that cost only \$14.40.

WORDS FROM THE WATCH-TOWER.

By WATCHMAN.

A LENIENT judge, if sixty years' experience goes for anything, writes as follows to *The Photographic News*:

"It would be rather interesting to know if any of your readers can beat this.

"During my two weeks' holiday at Weymouth I used twelve dozen plates and finished them at home, and I now have 143 good prints and 142 good negatives. I never developed a trial plate on my holiday, and simply used a system of exposures written down from experience. This means that, out of twelve dozen plates exposed on my holidays, less than one per cent. were failures.

"As I have said, it would be interesting to see how near your readers have come to this record for a summer holiday batch, especially as I used no exposure meter, which most people talk so much about.

"I may say that my percentage seems pretty much the same all round; but this is the first time I have counted up results." The hen's opinion of her own chickens is well known and it is just possible that a less prejudiced

judge would find not a few failures in his gross less one of successes.

* * *

Is there anything new under the sun? The *Photo-Revue* reproduces a drawing now in the Lille Museum and supposed to be by Chimenti da Empoli, a Florentine painter of the sixteenth century. It includes two figures posed alike save for stereoscopic difference; and when examined in the stereoscope or when the figures are combined in the way many can do without its aid, the effect of roundness or solidity is perfect. Such a result could hardly have been arrived at accidentally.

* * *

The ways of the patent office or some of them are strange. It seems that the Rathenower Company a considerable time ago introduced a three lens system corrected for color and spherical aberration, and sold it largely under the name "Periplanat"; but they omitted to register the name. Seeing the success, and thinking the name worth trading on, a Hamburg firm, Luttke & Amdt, recently introduced a lens of their own make, giving

it that name and registering it in spite of the protest of the firm which invented it and had so long used it. The German Patent Office disallowed the objection, with the result that the Hamburg firm, the appropriators, refuse to allow the Rathenower Company to continue to sell their lenses under their own old name, and put them to the expense of advertising the new one, the Metaplanat.

* * *

Felix Raymer has made a discovery that should put an end to the almost daily record of the pilfering of bank and other cashiers, and enable employers to select none but honest and active men and women. Here is what he writes in a contemporary: "When a large corporation or firm are corresponding with a person with a view to giving him employment, in nearly every case they will request the prospective employee to send his picture. This picture is submitted to the close scrutiny of an expert in character reading, and in a very few moments he will submit his chart reading to the corporation, and they can at once see from it whether this man is an honest man, a lazy man, a hustler, a 'good mixer,' or, in other words, tell the disposition of him every way." Honesty and activity, and even "mixing," whatever that may be, are all very well, and if all our photographers were equally alert, they should soon bring in the golden age of banking and commercialism. But "Tell the disposition of

him every way" takes the cake. Of course it applies to her as well as to him, and who after this will think of entering into the matrimonial bonds without first studying the chart of the character expert? No more ill assorted unions, and no more work for the divorce court. But it may be that all photographers are not equally expert, some may not have the knack of "lighting" so as to truthfully depict the inner man, as on that, to a large extent at least, it seems to depend. And so much the better for those who can. They have only to advertise *Character Guaranteed* and their fortune is secured.

* * *

Strips of moving-figure negatives are evidently expensive things, especially when one breaks his promise to make them. A certain Count Leontieff, apparently at the instance of the Biograph and Mutoscope Company, induced the Emperor Menelik of Abyssinia to consent to be bioscoped, the inducement being two machine guns with a tip, probably to obtain an introduction, to his Scotch prime minister Ras Makonnen, of five hundred rifles with a hundred rounds for each. For some unknown reason the company failed to take advantage of the arrangement and did not see that they should reimburse the Count for his outlay. The Count thought otherwise and the court agreed with him, ordering the company to pay him the sum of \$9,000.

NOTES.

CRYSTALLIZED VERSUS ANHYDROUS SODIUM SULPHITE.—We have long urged our readers to use the crystallized rather than the dried sodium sulphite, both because the latter is not so good to begin with and because it does not keep so well as the former. And now a higher authority comes to our

aid, and it is to be hoped that plate makers and others who have been in the habit of recommending the dried will in future pin their faith to the crystallized. Writing in *Photography*, Professor Namias says:

The commonest of the sulphites used in photography is sodium sul-

phite, which is met with in commerce either in the form of crystals or in the anhydrous condition. Analysis of the best commercial samples in the market were sufficient to convince me that it is impossible to get sodium sulphite absolutely pure. The purest sample of crystallized sulphite examined did not contain more than ninety per cent. of sodium sulphite, strictly speaking. In good commercial samples the sulphite seems to average sixty to seventy per cent.; in bad samples, and these are by no means rare, ten to thirty per cent.

In the anhydrous sulphite the proportion of sulphate is always considerable. It is clear that the heating carried out to remove the water of crystallization, even when done under the best conditions, produces a partial oxidation of the substance. In different samples of the product of the same and a good house, I have found sodium sulphite crystals to contain 44.2 per cent., and anhydrous sodium sulphite fifty-five per cent of Na_2SO_3 .

It can be seen from this that if we adhere to the recognized formulæ in making up solutions, it is quite possible that they may contain only half the quantity of sodium sulphite that we suppose them to contain, and a great deal of sodium sulphate, the action of which in the developer is not very clearly understood, but is, I believe, harmful.

Crystallized sodium sulphite does not need such careful preservation from contact with the air as does the anhydrous sulphite. This holds from the fact that in the case of the crystals, especially if they are large, the air cannot have as much action as it does upon the minute grains of the anhydrous salt, which, weight for weight, expose a far greater extent of surface. But there is, I believe, a still further cause in the fact that the anhydrous sulphite easily absorbs water, and the heat caused by its hydration facilitates

the oxidizing action. While anhydrous sodium sulphite, therefore, appears theoretically preferable, and from its powdered form more convenient in practice also, its use is not to be recommended without qualification.

AN UNSUSPECTED CAUSE OF CAMERA MOVEMENT.—Edgar Scamell sends the following communication to *Photography*, especially interesting to photographers in this country where stoves are so common: "An unexpected cause of camera movement recently occurred to me whilst making some 15 inch by 12 inch negatives of the interior of a city warehouse. Three plates were exposed, each for three-quarters of an hour. The results of two were excellent; the third, however, showed distinct movement of the camera. A fresh attempt was made the following day, with a similar result—movement.

On thinking the matter over, it dawned upon me that for this last exposure the tripod stood in close proximity to a large closed stove which gave out considerable heat. During the three-quarters of an hour exposure the tripod had time slightly to shrink or warp, thanks to the stove. As a remedy, a third exposure was made, using two packing cases as a support for the camera instead of the tripod. As these cases had been in the warehouse for a considerable time they were thoroughly dry. This ended the trouble, and a sharp negative was obtained."

World's Fair, St. Louis, 1904, Louisiana Purchase Exposition.

ST. LOUIS, U. S. A., March 16, 1904.

THE AMERICAN AMATEUR PHOTOGRAPHER, No. 361 Broadway, New York City, N. Y.

Gentlemen: Relative to your sundry favors and inquiries regarding the use of cameras.

I beg to advise that the Exposition management has determined that patrons of the Exposition may use hand

or tourist cameras, 4x5 inches or smaller in size, without tripods, free of any charge.

The Official Photographic Company will have stations on the grounds where full lines of Kodak supplies will be available for the use of these patrons, if such is their pleasure.

Yours very truly,

JOHN A. WAKEFIELD,
Chief Department of Concessions.

Flat-Field Lenses.

IN response to our request for a mathematical answer to the questions in the letter by J. A. Anderson on page 141 of our last number, Mr. S. Stockton Hornor has kindly sent the following. First to "How far is this true?" he says, "Just as true as for distant objects within the same angle, except that all defects in flatness of field are multiplied two diameters. For instance, if a field at a point deviates 1,000 of an inch from true flatness when the lens is set for distance it will deviate 2,000 when set for copying full size; although in practice it will not be noticed." The reply to "Is this the correct view?" is as follows: "I assume the figures are correct, as I have not verified them, but the reasoning is faulty. Conjugate foci are always computed for rays from objects in the axis of the lens—a line drawn through the middle of the lens perpendicular to the plane of the diaphragm, as also is the equivalent focus; and in a flat-field lens the focus is greater at the edge of the plate. Given a flat-field lens of 8 inches equivalent focus, the a $3\frac{1}{2}$ plate (assuming that the 16.38 is the correct figure for the hypotenuse) is 8.19, consequently in copying full size the focus of the lens for rays

going to the edge of a 7 inch plate is 16.38 inches.

Briefly, your correspondent begs the question. He assumes that the lens has a flat field for distant objects and then sets out to prove that it hasn't one for near objects. You can readily see that it makes no difference whether a ray of light comes 90,000,000 miles or nine inches, it will be acted on in the same way by a lens if it be the same kind of a ray and traveling in the same direction.

Extraordinary Short Exposures.

THE following letter from an esteemed correspondent is one of those that we occasionally take for a text for "a few observations," knowing as we do that it voices just what many are thinking, and that to them the "observations" will be as useful as to our correspondent:

DEAR SIRs—In the February number of the AMATEUR I see a picture of a train, taken in 1-1200 of a second, and should judge that if it had about four times as much that the exposure would have been full enough. Now I am giving about seventy-five times as much exposure and you say (and I think rightly) that I do not give time enough.

How did he get such good results from so slight exposure?

If he can, we can if we only *know how* and it seems that ten times as much time, say 1-120 ought to do the trick any bright day.

Please let us know about it.

Yours respectfully,

W. H. B.

Without knowing anything about the particular shutter with which the photograph in question was made except that it was a focal-plane, we may say that as a rule, when exposures such as the 1-1200 of a second are talked about there is more guesswork than exact knowledge, and the guessing is

generally on the rapid side, few of those credited with the great rapidities panning out to anything even approaching the estimated speed. Then, you cannot easily compare the actual speed of the focal plane with that of a shutter working between the lenses, as with the best of the latter the estimated speed is the time that the plate is exposed to the full opening, while with the former it is the time that any one point of the image is uncovered by the passing of the slit in the curtain. Given the size of the plate, the width of the slit, and the time it takes to pass from top to bottom, a little figuring will make the result very much less surprising than you seem to think; but *cui bono*.

Yes; what on earth is the use of such a photograph, or what can tempt any one to spend time and material in making it? It cannot be to show the engine and train as both could be much better rendered while standing still; nor can it be to suggest rapid motion as the more perfect, according to the rapid worker, the more, at rest, as in the case of the photograph in question, the train appears. No better commentary on this phase of the question could be made than the fact that the author considered it necessary to accompany the photograph with an affidavit from the traffic manager of the line as to the speed at which the train was going, or indeed that it was going at all.

In the long, long ago, when photography was young, there might have been some use in such a feat; but, thanks to the chemist and the optician, exposures short enough to show the issuing of a bullet from the mouth of a

rifle carrying the compressed air before it are easily accomplished; making what might have then been a curiosity of no particular interest now.

Instead, therefore, of wasting time and occupying space telling you how to do that which is easily done and worthless after it is, we prefer to believe that you aim at something higher, something more in line with your previous work, and recommend that instead of trying in how short a time you can get something passable rather see how much it will bear consistent with all necessary contrast. True values in pictorial work is a first essential and without sufficient exposure for the shadows that cannot be obtained. Never mind what may be said or done by others, the records of short exposures are like fish stories, requiring barrels of salt. Whenever, by slow and careful development, you cannot get the desired detail in the shadows before not only the highest of high lights, but lights very much lower are all equally opaque in the negative you may be sure that the exposure has been too short; and the only way to success is to give exposure sufficient to bring out all necessary detail in the shadows, leaving all but the highest lights sufficiently translucent to transmit each its relative degree of light. The "soot and whitewash" results of under-exposure is no longer tolerated by any one worthy of the name of photographer.

Recovering Over-Toned P. O. P. Prints.

Printing out paper is still largely used, and over-toning, even to the slatey blue color is with many the rule

rather than exception, so that the following simple method of bringing them back to the desirable warm brown should be of value. It was contributed to *The Photogram* by A. H. W. Weston and commented on by another authority as follows:

Over-toned P. O. P. prints, especially flat prints, which are very apt to be overtoned, can be easily re-toned to a pleasing depth by the following method. It does not matter how long the prints have been toned, or if they are mounted, although unmounted prints are to be preferred. No dishes or chemicals are required, only an ordinary printing frame, a piece of thick glass, and a good fire. The latter is best when the flames have died out and only the glowing coals remain. Place the glass in the frame, and the print to be re-toned (which must be thoroughly dry) film down on the glass. Fix the springs, and hold it with some cord over or before the fire, keeping it moving in such a way as to ensure an even and intense heat. As soon as the glass is hot right through the toning will start, the gold being gradually decomposed by the heat. Examine the print from time to time through the glass, and at the desired tone remove the print and the toning will at once cease.

In this way prints can be re-toned in five minutes. Very blue and hard prints require longer. Unmounted prints are preferable, as they make better contact with the glass.

Major-General Waterhouse writes: "Some experiments which I have made on this subject go to show that

the change of color is produced by moist heat, and not by dry heat.

"Two P. O. P. prints (one matt and one glazed), both well toned with sulpho-cyanide and gold and of a good purple color, were torn in half and one piece of each was placed in a printing frame backed with strawboard and cloth, the frame being damp from being kept a long time in a room without a fire. The frame, with the prints in it, was placed in front of a good fire, and on examining it some minutes afterwards when it had become well warmed, the change of color to a redder tone remarked by your correspondent had taken place, but when opened the backing of the frame and the cards and print were moist and *steaming*, so that the change in the tone seems in some respects analogous to that of a wet print as compared with a dry one, but the change of color was permanent. On again putting another piece of each of the prints into the dried frame and replacing it before the fire there was no such change of color—from which it would appear that the change must have been due to the moisture. A well-toned print on albumenized paper exposed in a damp frame under similar conditions showed no change of color by heat, nor did another well-toned glazed P. O. P. print done in India. It may be mentioned that one of the first prints tried (the glazed one) had been treated with an alum and salt bath before toning.

"Further experiment in actually steaming prints over boiling water in a closed vessel shows that the above explanation is correct. The albumenized paper print, and other prints which did

not show the change in the frame, showed it distinctly and readily when exposed to the hot moist steam."

Radiation.

Rays X, N, *a*, *b*, *c*, etc., are in the air in more senses than one, and apparently we are only beginning to take notice of them. Radium has taken the scientific world by storm and like storms of a more literal kind, it is not likely to pass without disturbing the *status quo*. Becquerel, although perhaps not the first to notice the effect of certain rays different in many respects from light, was the first to submit them to the test of experiment, and they were and to some extent still are known by his name, the "Becquerel Rays." It remained, however, for another Frenchman and his wife, M. and Madame Curie, to get down to, in a sense, to the first cause of those rays, and in radium find a material or metal more wonderful than the most wonderful feat of the magician, a lamp that burns practically forever without a fresh supply of oil, a body that practically parts with parts of itself for the same unlimited period without becoming lighter.

Nor is that all, or to photographers even the most interesting. To him it is of little consequence whether those rays are "ethereal stresses" or "the bombardment of electronic emanations," but he is deeply interested in the fact that they act on his plate as do the far greater wave lengths of the ultra-violet and the blue-violet, while they are so inconceivably short as to readily pass through matter that to them is opaque. Some idea of the

penetrating power of the radium rays may be got from the following account of an experiment performed in the American Museum of Natural History

A remarkable illustration, almost startling, of its penetration was demonstrated with the following experiments: Radium bromide of 300,000 activity was placed in a sealed glass tube contained in a rubber thermometer-holder, the top of which was tightly screwed down, and the whole placed in a water-tight tinned-iron box; over the box were placed, first, a heavy silver tureen 1.5 mm. thick, then four copper plates, such as are used for engraving, and finally a heavy graduated measuring glass 10 cm. in diameter filled with water to a depth of 15 cm. A diamond was then suspended in the water and became fluorescent immediately. Whenever the tube with radium was withdrawn a distance of more than one meter, the fluorescence ceased, but was resumed on replacing the radium under the tureen. This experiment showed that the influence of the radium was exerted successively through glass, rubber, silver 1.5 mm. thick, four copper plates, glass 0.5 cm. thick, and finally 8 cm. of water.

The radium in this experiment, it will be noticed, was only of 300,000 activity, uranium being taken as the standard at 1, while it is already on the market of a strength of 1,800,000; and we may well wonder and ask, if such can be done with an activity of only 300,000, what will it do at 1,800,000? the comfort being that photographers are not likely to find lying

about radium of even 300,000 or any other strength.

But it is not safe to whistle till you are out of the wood; there is more to come. Rays, we have already said, are in the air; the wonders of radium put men on the *qui vive* and they are being found in the most unsuspected and unlikely places; discoveries that easily account for many of the mysteries of the past. Perhaps the most recent and certainly not the least interesting are the Blondlot, or, as he calls them, the N rays, which emerge from the human body, and probably from the bodies of other animals as well. According to Blondlot, these rays proceed not so much from the body as a whole, as from certain parts such as the nerve centers during excitement, which makes it possible that the French doctor from whose writings we were wont to extract some fun; Bardouc, we think, was the name, but have not the time to make sure, may not have been so far wrong as we thought. He, it will be remembered, by fastening a photographic plate to the chest, head, or other parts of the person, got—shall we say? radiographic evidence of the then state of the mind, joy, grief, etc.

Be all that as it may, there is no doubt that the so-called "dark light" or radiation is often present where little expected, and as it, from its infinitely shorter wave lengths, passes through the holder in which plates are exposed and the material in which they are packed, including, of course, the boxes, as easily as ordinary light passes through glass, it behooves both dealer and photographer to exercise a

care in the keeping and using of their plates hitherto undreamt of. Just to what extent that care should go radiation is not yet sufficiently understood to enable us to say, but in the meantime it may be well to know that lead seems to be more opaque to most of those rays than most substances, and that where plates are to be stored for any length of time a wrapping of sheet lead might prove safer than anything else.

How to Prevent Artificial Light Developing Paper From Curling.

BY MILTON WADE, N. Y.

Lay out blotters. On these place muslin from which starch has been washed out, and keep the muslin for just this purpose. Take prints from the wash water and lay face down on the muslin. When prints are just dry enough so that films will not adhere, and yet while quite damp, they are rolled, film out, around a roller $1\frac{1}{2}$ to 2 inches in diameter. (I use a piece of background roller, the sort they are shipped around), then a small rubber band is placed around each end and the roller removed, leaving a circular form of the rolled prints. All are prepared in this manner (it takes less time to do than to tell), and they are allowed to become stone dry while in this shape, thus allowing the pores of the gelatine film to stretch. The rubber bands are then removed, and if necessary three or four prints at a time are rolled *the other way* around the roller to make them lie flat. Having been stretched while drying they will not curl again. I find it advisable, when heavy paper with smooth surface is used, to, before placing on the roller, curl the ends of the print backward with a ruler, to prevent the sharp edge marking across the face of the print during the drying process.

PYROGRAPHY OR WOOD BURNING.

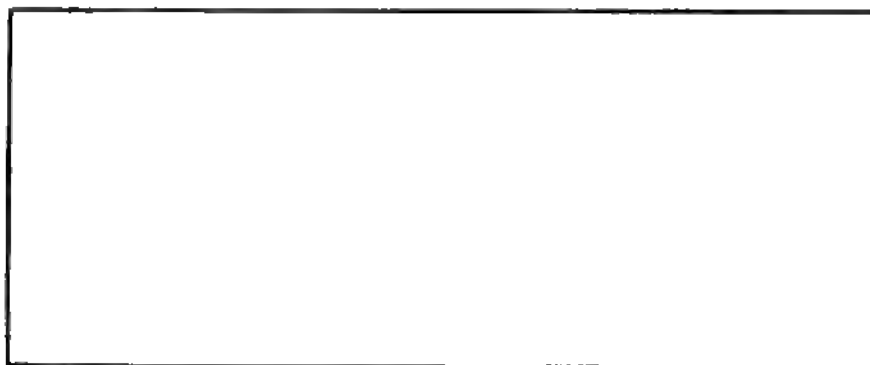
III.—Simple Decorative Designs.

By F. W. GAENSLY.

Before attempting any figure or landscape work with the burning pen, it is advisable for the beginner to practice with simple geometrical designs. As in the study of freehand drawing, this enables the student to become familiar with the use of the pen and improve his outline work and shading. In this lesson we illustrate a few such simple designs which may be applied to the decoration of various articles and also used later on to embellish more pretentious work.

which, when attached, extend half an inch outside the body of the box.

If the design given in the lesson is preferable to any which the scholar may procure, it can be easily enlarged from the illustration by dividing the same into squares of equal size, say 14 squares for part 1 and 4 squares for part 2. In marking off the squares do not include the narrow white border shown in the illustration, as that represents the half inch extension and should be marked off on the cover of



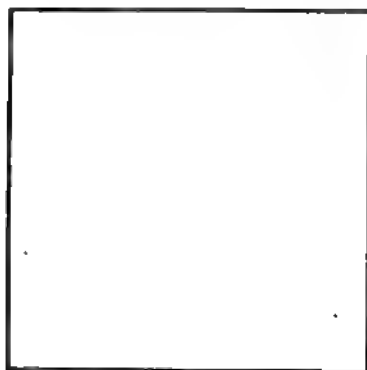
No. 1. Part 1.

No. 1 is suitable for a tie or glove box, No. 2 for a handkerchief, collar and cuff or work box, Nos. 3, 4 and 5 for continuous borders or corner pieces, etc.

The original dimensions of No. 1 are as follows: Front and back panels of the box are 14x4 inches; ends 4x4 inches, when back and front are attached; cover and bottom 15x5 inches

the box before tracing the design, so as to leave within it an oblong space measuring the same as the front and back panels of the box. Procure a piece of thin white paper and mark off an oblong 14x4 inches for part 1 and a square 4x4 for part 2. Divide part 1 into two inch squares, which will give you the same amount as you have divided the illustration into. You now

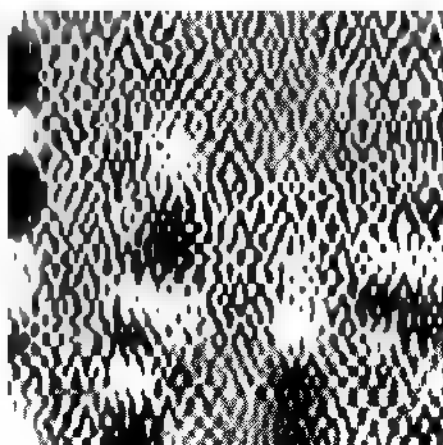
enlarge the design by drawing each line as many times longer or each curve as many times deeper than shown in the illustration, as your design is longer or wider than the one given. Never forget that you are enlarging, and in order to do so properly, every line must be shaped exactly as shown and end in the same spot in the large square as in the smaller one. When you have succeeded in doing the first half go over the tracing with a soft lead pencil and you will find by simply folding the ob-



No. 1. Part 1.

long in half (design inside) on the line marked (a) and vigorously rubbing the back of the drawing with the finger nail that on opening the same you have an impression on the untraced half the same as you made on the other, thereby completing the design. Follow the same instructions for part 2. This method will be found very beneficial to the scholar enabling him or her to enlarge or reduce any design perfectly if they are only careful enough to trace their lines in proportion to those of the original. When the designs are finished, trace them upon the box with the aid of a piece of carbon paper, as explained in last month's edition. Part 1

upon the cover and back and front panels and part 2 upon the ends being careful to lay them on perfectly straight. Take up the burning pen, hold as in position 1, and with a moderately heated point burn a good strong



No. 2.

line over every line of the tracing, being careful not to scorch the wood where it should appear its natural color in the finished article. In many pieces of work it is the desire of the burner to give the design the appearance of being inlaid as in this case, so, to avoid scorching the wood in the places where it should appear untouched, always work on the side of the lines which is to be used for the background. When the lines have been all burned hold the pen as in position 2, and burn the background a very deep brown, as shown in the illustration. Avoid burning too deeply into the wood, as it will appear charred and often retains a bad odor. When the background is finished, shade the parts which are shaded in the illustration as explained in last month's issue of this magazine for graduated

shading. Then burn the edges of the cover and bottom a deep brown and finish by polishing with furniture wax, which preserves and deepens the color.

No. 2 measures 7x7 inches on each of the four sides when put together, and 8x8 inches for cover and bottom allowing for a half inch extension, as in Article 1. Follow the same directions for outlining and tracing as for No. 1 in this and all the following work. Darken the background as shown in illustration No. 2, after which you proceed to burn the wood inside the design with holes of as equal size as possible by holding the pen as shown



No. 3.

in position 3. Leave the narrow interwoven design plain except where a little shading is necessary to give the effect of one loop passing under the other, also leave the half inch extension on both top and bottom perfectly plain with the exception of the edges, which should be deeply browned, as in Article 1. The centerpiece is gradually shaded from deep brown, the natural color of the wood as it approaches the edge; if desired it may be left plain on the cover and a monogram used instead. Finish with wax polish.

No. 3 is excellent for a border where great contrast is desired. Trace out-

lines as for previous articles and burn the background as dark as possible without charring the wood. The design may be left a natural wood color or tinted as desired.

No. 4 is a beautiful and not difficult border design, being merely a combination of the different styles of burning explained in this and the previous lesson, but great care must be taken

No. 4.

and very little heat required in the shading in order that it will not appear harsh, but blend into the natural color of the wood. The background is simply a number of holes of unequal size burned into the wood with the tip of the pen. (See position 3.)

No. 5 is very simple, being composed of all straight lines, with a deep back-



No. 5.

ground and an effect similar to the ground work of the previous number. The holes may be of equal or unequal size.

EXPOSURE THROUGH COLOR SCREENS.

T G. WATSON, in *Photography*, gives the following method of ascertaining the increase of exposure necessary with color screens of different densities; and orthochromatism being one of the "Trinity of Technique" now being dealt with in our pages we gladly reproduce as much of the article as is necessary to enable our readers to measure such screens as they may either make or buy.

A color screen that would act satisfactorily by, say, gaslight, and necessitate very little addition to the exposure required by the plate when it is not in use, might prove insufficient to be of value when used in good daylight, or require a considerable addition to the normal exposure. The compensating exposure would vary with the source of light employed.

As in general work, the exposures will have to be made in the daytime, the tests in such cases must also be made by daylight. However expeditiously the tests are made, they will occupy some time, and while it is probable that if a bright day at noon is chosen for the work, the light may remain constant for an hour or so, it is desirable to adopt methods that may be applied in as little time as possible.

Recently a piece of apparatus was suggested by Dr. L. Gioppi that meets the case fairly well. Two sheets of thin opaque card are cut to fit in the rear of the camera, immediately in front of the reversing back. To avoid the risk of straining the woodwork it is desirable that the card should be as thin as possible; in fact, with a little care in handling there is no reason why black needle paper should not be used, but the exceedingly thin brass known as paper or letter brass is much more convenient to handle than either. Each sheet is divided by pencil lines into six parts, one line being drawn down the

centre in one direction, and two dividing the sheet into three equal parts in the other direction. From one of these shields one of the corner pieces is removed, and from the other a middle section from the centre to the edge. By turning the first sheet round, each of the four corners may be exposed in turn, and by the use of the other each of the middle sections may be exposed, making six exposures in all.

By way of illuminating the plate evenly a sheet of white blotting paper should be pinned up where the unobstructed light from the sky may fall upon it; north light is best, but in any case direct sunlight must not strike upon it. The camera should be set square to the paper a few feet away, and if *f-11* is used, one second without the screen will be a convenient exposure. The shield with one corner cut out is placed in position, and the dark slide bearing a plate of the brand with which the screen is to be tested is inserted. Then in the absence of the screen an exposure of one second is given. The shutter is closed, the reversing frame removed, the shield is turned round, and the dark slide is again placed in position. The screen is now fitted to the lens for the remaining exposures. An exposure of two seconds is next given. Again the shutter is closed, the shield turned upside down, and a third exposure given, this time of four seconds, and so on, doubling the exposures each time.

When all six exposures have been made the plate is developed, and it will not be a difficult matter to estimate which of the five exposures with the screen has given the same density as that obtained with the exposure without the screen.

The exposures in such a series will range from twice to thirty-two times

the normal, and will be sufficient for all but the screens of deepest tint. When screens that compensate for the red rays have to be tested, the exposures may begin with eight or sixteen times that given without the screen.

When two or more screens have to be tested at the same time, a method that we have occasionally employed will prove more advantageous, as all the tests can be made upon the same plate. In this case one shield only is required, and is cut vertically into two or three strips; one strip more than the number of screens to be tested. In comparing two screens, for instance, the shield is divided into three, and the center strip is removed while the exposure without the screen is being made. The exposure may be as before, one second.

The central strip is then replaced, and one of the side strips is removed. The screen to be tested is placed in position, and the cap being on the lens, the shutter of the slide is drawn. An exposure of two seconds is given, and the lens is capped. The shutter is pushed home, say, an inch, and another exposure of two seconds is given. Again the shutter is driven in an inch, and then four seconds exposure is given. This is repeated till the shutter is pushed quite home, the exposure being doubled each time. The actual exposures will be two, four, eight, and so on, as before, and if it is desired to carry the exposure very high, say one hundred and twenty-eight times that given without the screen, it is only necessary to divide the length of the plate into seven sections, say in the case of a half-plate of three-quarters of an inch each, instead of one inch, as suggested above, to accommodate them all. Pencil lines ruled across the inside of the shutter will serve as guides in pushing it in after each exposure.

In testing the second screen the one side shield is replaced, and that at the other side is removed. When all the

exposures have been made, and the plate is developed, it is even more easy to estimate the densities than by the method first described, as the part exposed to white light lies adjacent to each of the parts exposed through the screens. This advantage may be secured even when three or four screens have to be tested by having strips between them exposed without the screens, and all these exposures may be made at the one time.

It is so desirable to have all the tests upon one plate, thus avoiding irregularities due to differences in development, that it is well worth while to devote a little time to cutting and fixing the shields, so that they may be removed and replaced speedily. At the same time as it is desirable to waste little time between the exposures lest the light should alter the while, this arrangement will be the better as being speedier than the former.

In testing screens by artificial light the same method of working may be adopted, the light being thrown upon the white blotting paper, but all the exposures must be many times longer. Time may be economized by directing the lens to the source of light, and by interposing between them two thicknesses of ground-glass set about one inch apart. With the electric arc the light reflected from the blotting paper will prove speedy enough. With oil lamps, gas jets, incandescent mantles, or incandescent electric glow lamps, it will be better to transmit the light through the ground-glass as suggested, and two or more of the lights may be used, since so long as the light remains constant the intensity of it does not affect the results, but is simply a matter of convenience.

It may be objected that in this system of test exposures there is no provision made for tests between a certain exposure and one of twice its duration. Nothing closer than this is ever wanted in practical work.

METOL-HYDROCHINON FOR BROMIDE AND GASLIGHT PAPERS:

By A. K. BOURSALT.

While amidol, eikonogen, rodinal, edinol, etc., have been widely advocated for the development of gaslight and of bromide papers, the instructions coming with each package of paper and which evidently represent the choice of the manufacturer are overwhelmingly in favor of a mixture of metol and hydrochinon.

The results obtained with this developer are more reliable and, on the whole, as perfect as those obtained with any other agent. It is inexpensive to make up; keeps far better than amidol or edinol and works faster than eikonogen or rodinal. Modifications are easily made to suit all brands of papers. The color of the deposit is readily modified to suit the most versatile tastes and the range of tonalities obtainable is longer than that which can be produced by the use of any other developer. Besides, it is inexpensive and requires but such chemicals as are conveniently obtained everywhere. In spite of all these advantages there is a shadow side to this excellent developer. The very quality of being simple in its composition and inexpensive has led many manufacturers, and especially some of the chemical firms who prepare M. Q. tubes for jobbers and retail dealers, to alter its normal proportion beyond all measure sacrificing the quality of the results for the sake of lowering prices. The competition and cutting down business have been very keen in that line, and as a result the market is being swept by a host of M. Q. tubes, nameless mixtures irrationally compounded, and which have none of the qualities referred to a moment ago.

For a normal metol-hydrochinon developer for bromide paper the hydro-

chinon should not be in excess; and this is precisely the case with the cheaper M. Q. tubes. Ashydrochinon is much less expensive than metol, the manufacturers decrease the amount of the latter and increase that of the former beyond all proportions. The writer has analyzed tubes of that kind where the proportion of hydrochinon to metol was as high as 10 to 1 (even 12 to 1 in one case).

Is it to be wondered at if under those conditions the results are not satisfactory?

Except for special purposes (colored prints) the amount of hydrochinon should never exceed that of metol used. Half of each gives the most powerful and fastest developer. It is evident, however, that to give the best results these proportions will have to be slightly modified to suit the brand of paper adopted. With most of them twice as much metol as of hydrochinon will give by far the finest prints. The following developer is excellent for nearly all brands of paper on the market:

A	
Metol.....	50 gra.
Hydrochinon.....	25 "
Sulphite of Soda (Anhydrous).....	$\frac{1}{4}$ ounce.
(or Crystals).....	1 "
Water up to.....	20 "

B	
Sodium Carbonate Crystals.....	$\frac{1}{4}$ ounce.
Potassium Bromide.....	20 to 30 grains.
Water up to.....	20 ounces.

Take equal quantities of A. and B. for bromide paper.

For gaslight papers reduce the amount of water one-half and the amount of bromide of potassium as much as possible until just enough is left to prevent fogging. It is unfortunately not possible to specify the exact quantity, as various brands of paper are vastly different in that re-

spect and as besides that amount depends also largely on the age of the paper, its state of conservation, the quality of the water employed, and many other minor circumstances which it is impossible to enumerate and consider here singly. For certain papers the amount of sal soda had also better be increased to one ounce. For carbon velox, for instance, the formulæ modified as follows will produce results that will leave nothing to be desired.

A

Metol.....	50 grains.
Hydrochinon.....	25 "
Soda Sulphite (Anhydrous).....	¼ ounce.
(or Crystals).....	1 ounce.
Water up to.....	10 "

B

Sodium Carbonate Crystals.....	1 ounce.
Potassium Bromide.....	1 grain.
Water up to.....	10 ounces.

Take equal parts of "A." and "B." and add as much of a 10 per cent. solution of potassium bromide as is necessary to keep the whites clear, or as is wanted to alter (with increased development) the color of the deposit.

It is sometimes advisable when particularly soft gradation, delicacy in the highlights and transparency in the shadows are desired or when hard, contrasty negatives are met with, to still further reduce the hydrochinon or even to dominate it altogether. Again metol alone in bad cases or over or under-exposure will permit of forcing development to a degree of which an adjunctive of hydrochinon will not allow. Many careful workers will thus find that besides the developer given previously it is a good plan to have on the shelf a single solution metol developer which will prove exceedingly handy should occasion require. The formulæ runs thus:

Metol.....	50 grains.
Sodium Sulphite (Anhydrous).....	¼ ounce.
(or Crystals).....	1 "
Sodium Carbonate.....	1 "
Potassium Bromide.....	2 to 4 grains.
Water up to.....	20 ounces.

But for all ordinary purposes and for general use in the printing room

we do not think anything can beat the formulæ given previously.

When strongly colored results are wanted, up to red chalk with the slower papers, the hydrochinon is then (but then only) slightly increased and the amount of sulphite diminished. Our formulæ would, for instance, become:

A

	No. 1	No. 2
Hydrochinon.....	60 grs.	or 50 grs.
Metol.....	90 "	25 "
Soda Sulphite (Anhydrous).....	100 "	100 "
Water.....	10 oz.	10 oz.

B

Sodium Carbonate Crystals.....	1 ounce.
Potassium Bromide.....	5 to 10 grains.
Water.....	10 ounces.

A No. 1 contains the largest amount of hydrochinon desirable, and, we repeat it, only in such cases when de-Hydrochinon has, unfortunately, the tendency to fill up the detail in the shadows of the prints, and while it is desirable to have some in an M. Q. developer to give body to the print, too much of it will cause the loss of their transparency, so desirable a quality, and so easily obtainable by a sufficient amount of metol in the developer.

We feel confident that those of our readers who will kindly give the preceding formulæ a serious trial will find it difficult afterwards to feel satisfied with some of the ordinary M. Q. compounds now on the market.

A. K. BOURSALT.

Monthly Prize. Picture Competition.

Five Dollars will be paid for the two best genre pictures which reaches us before the 25th of this month. First prize, \$3.00, Second prize, \$2.00. The picture, must have the coupon to be found in our advertising pages pasted on the back in order to be eligible for competition. Address packages "Competition Editor" American Amateur Photographer, 361 Broadway, New York.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1729. E. G., Zion City—"The Barn-Door," which would be a suitable title for this unnamed print, is realistic rather than picturesque; but is such as will appeal to the farmers, or more especially to the farmers' wives, more strongly than would something more pictorial. It is such a scene as may be seen any morning or evening on a farm where the keeping of chickens is sufficiently understood to make it one of the most profitable industries of the farm. The farmer's wife or her "help" stands at the barn door with a dish of food while the chickens in an uncountable number rush to meet her; not deterred by the farmer's boy, who, between them and her, bends down to talk to one evidently a pet. The arrangement is satisfactory but the

for the view, both as to selection, view point, and photography. By covering the blot with the finger it is surprising how everything takes its place both in perspective and placing, giving a lesson that you will never forget, showing how a little thing in the wrong place can do a great

harm. "The First Snow" has evidently been exposed for the shadows and developed for the lights as both are just as they should be, the trees, in most snow scenes black as paper can be made, are here full of bark detail, and the whole of the values true to nature. As an example of snow photography we think the picture well worth the trouble of reproducing with the

exposure has been so short as to reproduce everything as if it had been either white or black, neither of which could have been found in the subject. A larger diaphragm and shorter development would have given you very different values, have given everything in something like their true color luminosities.

1730. H. W. D.—Your snow scenes are decidedly above the average, having evidently been sufficiently exposed, a rare thing in such work. We select No. 3 for notice, not that it is the best but because there is more to say about it. And first, what could have tempted you to let the boy stand staring into the camera in the very strongest place in the composition, a blot that would have spoiled the best picture that ever came out of a camera? Aside from that we have nothing but praise

figure removed; not a difficult job when the plate is worth it.

1731. SIDNEY S. CONGER—"The Beach"

is an improvement on most of your work hitherto sent although seriously handicapped by the black mount. The horizon line, however, renders it less satisfactory being a little too near the middle and too nearly cutting the composition into two equal parts. Here, where the foreground is of little interest, a lower horizon line would have been an improvement, especially as the sky is so good. One of the best proofs of the quality of the little print is the fact that it sends us back to the sunny summer days at our home by the sea.

1732. H. BERRY FINN.—“The Birth of Spring” is an almost perfect record of a subject that might have been pictorially rendered with equal perfection. A rustic bridge, six or eight trees of various kinds, and the usual brush that go to make up

fact,” a phase of the art quite as important as the pictorial.

1733. LILLIAN McDONALD.—“A Cloudy Morning” belies its title there being only the faintest indication of clouds in a sky of nearly white paper. Nor is the river hardly less white, and but for the shadows of the foliage on the right could not be recognized as water. Then, the sky is large, out of all proportion to the land, the sky line being less than an inch from the bottom of a four inch print, and the foliage, mainly trees, is of one uniform black. It is a print from a much under exposed negative, probably a snap shot in which insufficient care was taken to see that sky and land had each their proper placing. Pictures are not made without much care and study; and the right degree of light and shade cannot be got without sufficient exposure, none of which have been given to this.

1734. Mrs. J. R. LORAN.—The unnamed print is a beautiful bit of cloudland, one of those difficult to catch but grand when caught effects, rays from a cloud-covered sun,—“the sun drawing water,” according to the days of our childhood; and all the more beautiful in this case as they glorify the water below, so that sea and sky combine to make a charming little picture

†

H. Berry Finn.
The Birth of Spring.

such a scene; but unfortunately they are all equally rendered. From right to left and from foreground to extreme distance, all are equally sharp and of equal importance, such a photograph as in the earlier exhibitions half a century ago, would have stood in the foremost rank. While, however, you have missed a grand pictorial opportunity you have made, as we have already said, an almost perfect “record of

The only fault, and it is a serious one, is that you have given us too little of the water, it being altogether out of proportion to the large mass of sky. In this particular case we should have placed the sky line about one-third from the bottom, or a little more, and if that could not have been done without excluding the obscured sun we should have overcome the difficulty by making it an upright instead of an oblong, taking care, however, to retain the placing of the boat and house at the end of the pier, as they could not have been better and give life and action to the composition.

We like the little picture so much that if it were ours and we had time for ex-

perimenting, we should enlarge it, taking care, however, to spread out the water so as to give the horizon line the height we have suggested. We reproduce it with about half an inch of the sky trimmed off seeing we cannot replace the foreground.

1735. GEO. RICHEL.—The unnamed photograph is of a fine pastoral subject, not so well arranged as it might have been and far from well photographed. A roadway by the side of a river, a number of cattle in the middle distance, and in the distance trees in abundance. But the road starts in the very centre of the foreground dividing equally the matter on each side and disappearing in the very center of the distance. Sky and water, unless where the latter is in deep shadow, are simply white

negative, that had accidentally been twice exposed. Here is what he says: "An acquaintance of mine went hunting, taking one pointer dog, which in the middle of a large field, pointed to a covey of birds. The hunter made a snap shot (with his camera) but whether he followed it with the gun deponent sayeth not. Later in the day, and at about the same place in the field the dog pointed again, and again the camera was brought into play. He had, however, omitted to wind up the film after the first exposure, and when he developed it was surprised to find a picture of two dogs, the one "backing the other," and each so perfect that not even the proverbial expert could discover that it was not the result of one exposure."

1737. W. PICKERING—"Out of Commission" Of the two prints we very much prefer the brown, the other having too much of a washedout appearance. But we cannot say much in its favor, as, like most compromises, the attempt to unite the pictorial with the record has resulted in something that is neither the one nor the other and not nearly so good as either. The title, to begin with, is a misnomer, as while conveying the idea of a ship or at least a yacht, there are only the prows of two small flat-bottomed boats drawn up high and dry, and they are where they, or at least both should not have been, one in each of the two corners of the foreground giving a mechanical appearance to the composition; and while one or other plays the title-role they are the least important objects in the print.

Nor is there one object of more importance than another, a something to which all else should lead the eye and to which all else should be subordinate. It is a record considerably lessened in value by the attempt to give it pictorial quality, making all in the distance and middle distance flat and wanting in sufficient contrast, all in an almost uniform grey, and all equally defined. See "Answers"

1738 and 1739. H. DAMGAARD.—We make an exception in this case, as they come all the way from Denmark, and notice both in one number. "Winter in the Park" is an excellent example of "pure photography" of the record variety, that before the straining after the pictorial would have taken an honored place in even the best of the then exhibitions. From a pictorial point of view the repetition of the horizontal lines at the top and bottom of the mount by the lines of the bridge, the tops of the lower foliage, and the root-line of the trees, making at least five well defined horizontal lines is decidedly objectionable; but as a

paper, a thing that is simply intolerable, while parts of the road, and indeed everything in bright light is the same. A careful study of the rudiments of art will enable you to select a point of view that will prevent such wrong composition; and sufficient exposure will enable you to complete development before what should only be half-lights become, in the negative so opaque as to give only unaltered paper in your prints.

1736. F. C. BAKER sends, not for criticism but as a curiosity, a print from a

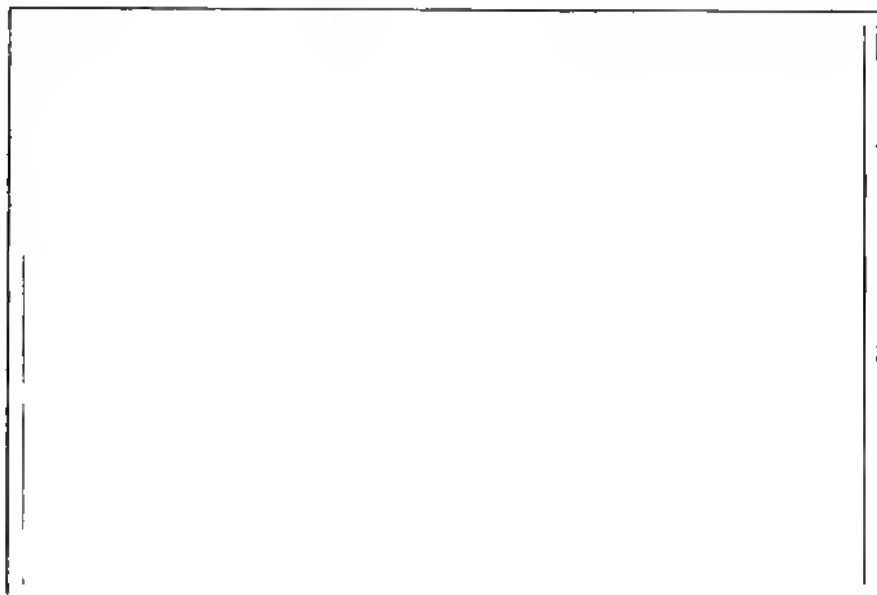
Pointer Backing Itself.
Result of double exposure.

photographic record of a beautiful part of the park it is as nearly perfect as may be. "The First Snow" is equally good from a photographic point of view, without the pictorial objections, although the snow is not much in evidence. A row of pollards, not much seen in this country but common enough where wood is scarce, a road running at an angle across, a fairly good sky, and that is all. But the effect is charming, and we return to it again and again, each time finding new material for thought.

1740. F. C. BAKER—The team at work in the snow is effective, but while we have no objection to any quantity of so-called faking it must be such as is not seen. Photographic sin is only such when it is discovered, and yours in this is too easily

seen to pass muster. Still, it gives a hint that has its value; had the chalk been of the yellow instead of the bluish shade, so as to thoroughly match the snow we should not have had a word to say against it, and nothing but praise for the charming picture.

1741. E. M. HULBERT—"Playmates," a boy and a dog sitting on a bank, leave little to be desired, and the oftener we look at it the better we like it. The close companionship between boy and dog, and the perfect confidence in each other is unmistakably seen, while the expression on the boy's face, gives evidence of the perfect happiness that, alas, is too often limited to the boyhood stage of life. Is he truant from school, tempted perhaps as much by the friendship of his canine friend as the beauty of the day? Or has he escaped from



some uncongenial job already forgotten in the delight of freedom and the ability to do as they like? Those and dozens of other thoughts are suggested by the charming little picture, which needs only to be seen to be admired, and which if enlarged would attract attention in any exhibition.

But, is it at its best? We hesitate to suggest an improvement, as although we have tried over and over again to cover up a part that it might be better without we cannot feel quite confident either one way or the other. The boy and dog are seated on

puny for the sentinel idea, and lead to a feeling of disappointment which, however, soon disappears, and they are forgotten in the beauty and storm suggesting sky. Without the trees and with a more interesting foreground the sky would make a delightful picture.

1743. H. G. WILSON.—“After the Snow” is a bit of good work, although we should have liked to see a greater distance between the middle and distant plane, which could only have been obtained by a lens of

E. M. Hulbert.

Playmates.

a bank, behind them a road, and beyond that a tree and some foliage, all sufficiently indefinite to be harmless and yet we sometimes feel as if they attracted the eye when it should be devoted to the objective point. The question is should this be trimmed off or not, and on the whole we are inclined to think that the removal of all just to the root of the tree would be an improvement.

1742. F. F. SORNBERGER.—“The Storm Sentinels.” An uninteresting foreground, with, rising from the sky-line, two uninteresting trees, the sentinels, and a sky more storm like than anything that we have seen for a long time. The trees are much too

longer focus. And we should have liked also to have seen the trees less unnaturally black. It seems difficult to get photographers to believe that snow scenes require a full exposure, considerably longer than this has got, and then development with care enough to prevent the snow getting too white. A full exposure and development in a weak solution is the key to success with snow. In spite however, of what we have said this is very much above the average of the snow pictures that have come to the portfolio this season.

1744. H. O. DAVIS.—"High Water," is an excellent photograph without any claim to the pictorial. A portion of a river with a background of dense foliage, excellent water and equally excellent foliage, but without any apparent object that should

to you is to study the elements of the pictorial and you will make your mark.

1745. CARL KREBS.—"A Wet Day," is more like a foggy day, although the umbrella suggests the title so that the picture well suggests both. It is on the whole an admirable picture, although we hardly un-

have made it thought worth a plate. There is not even a trace of atmosphere the extreme distance being as well defined as the foreground, or rather the forewater. Such good photography deserves more thought as to what you photograph, and our advice

Carl Krebs.
A Wet Day.

derstand the apparently slightly too light parts in the upper sky. We think we should have shaded them down just a little, but as it is we like it very much.

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

New York Camera Club.

The regular monthly meeting of the club was held at its rooms No. 5 West Thirty-first street on the evening of March 8. President Crosby presided. After the reception of reports from the secretary and the various committees, an amendment to the constitution was adopted by an almost unanimous vote, in regard to non-resident members as follows; "Section 3. Article 4: "Non-resident members shall be those who actually live outside of the limits of

the City of New York and outside of that portion of New Jersey lying east of Newark Bay and the Hackensack River and south of Fort Lee. Non-resident members shall have all the privileges of the Club, but shall not be entitled to vote nor be eligible for office, but nothing in this section shall be so construed as to effect the status of such non-resident members as were members of The Camera Club on May 7th, 1896."

A second amendment proposed to be

made in Sec. 4, Article 6 providing for the admittance to membership on the non-resident basis of painters, sculptors and actors at reduced rates subject to the discretion of the Board of Trustees, was voted down.

The Librarian, Mr. McCormick, reported the club had several duplicate books on photographic matters which would be sold at the annual club auction on March 10.

The secretary, Mr. E. L. Ferguson, called attention to the members Annual Print Exhibition to be held in April and urged all members to send exhibits.

It was stated that the new bromide enlarging apparatus (illustrated in our March number) was installed and was in good working order, the Cooper Hewitt light is used consisting of two tubes backed by a specially shaped parabolic reflector to evenly illuminate a ground glass placed between the negative and the light. While the light is not as strong as the arc light projected through a condenser, it is much more economical in the amount of electric current consumed and is of absolutely uniform steadiness. Exposures are about one-third longer than with the arc light.

The Chicago Camera Club.

The Chicago Society of Amateur Photographers has been dissolved and a new organization consisting of the same members has been incorporated (February 19, 1904) under the laws of the State of Illinois, entitled "Chicago Camera Club" the Directors for the first year are William P. Gunthorp, J. L. Rosenberger, E. W. Thomas, H. C. Knoke, George T. Power, D. H. Brookins and E. M. Heidkamp. They have chosen as officers: William P. Gunthorp, President; J. L. Rosenberger, Vice-President; H. C. Knoke, Treasurer and E. W. Thomas, Secretary. Dr. Clarke W. Hawley has been elected as Director to represent the club in the American Lantern Slide Interchange. A new constitution and by-laws was adopted. Annual meetings are held the first Thursday of June each year. The dues, as fixed by the Board of Directors, March 3, 1904, are \$15.00 for the first year, \$12.00 for each year thereafter, payable semi-annually. The program of the club for the year is to present monthly Lantern Slide Exhibits for members and friends, to have exhibits of pictures throughout the year with criticisms, as may be arranged, to hold outings during the season for the benefit of club members, to arrange for demonstrations of processes and materials and to promote an annual salon or similar important exhibit. These are all desirable

things for the club to foster and there is no doubt but what it will succeed, having for its members such earnest and successful workers behind it.

Brooklyn Camera Club.

A competition was held by this club during the month of February, in which the prize was a silver cup donated by Juan C. Abel. The trophy was awarded to Wm. H. Zerbe, Jr., for his landscape print "Heavy the Clouds and Dreary the Day," a charming print in dark green carbon which we have the honor of reproducing. The cut, however, fails to render the delicate half tones of the original.

An Invitation.

Is extended to all Amateur Photographers who come to the World's Fair City to visit the club rooms of the Missouri Amateur Camera Club, No. 1 North Broadway, for here is where you will meet your brother amateurs from all parts of the world. In the club room will be posted all the rules and requirements of Amateur Photographers, who wish to take pictures inside the World's Fair Grounds. The register in the club room, we hope, will contain the names and addresses of every amateur photographer who visits the Exposition.

MISSOURI AMATEUR CAMERA CLUB.

Wm. Burton, Secretary.

New Camera Club.

A new Camera Club has been organized in Jamaica, L. I. The club is the successor of the disbanded Queens County Camera Club, and starts with twenty-three members. The officers selected are:

President, William E. Case; Vice-President, Dexter H. Walker; Secretary, H. S. Rushmore; Treasurer, Clarence A. Ludlum; Membership Committee, Dr. Henry Macdonald, chairman; Henry D. Johnson, Nicholas W. Hausman. The Executive Committee is composed of the four officers and the chairman of the Membership Committee.

Following are the charter members:

Dr. E. F. Beers, Jesse Browne, Jr., William E. Case, Nicholas W. Hausman, G. P. B. Hoyt, Mrs. Percy G. James, Henry D. Johnson, Clarence A. Ludlum, Dr. Herbert Noble, D. S. Smith, H. S. Rushmore, Dexter H. Walker, James M. Fleury, Mrs. N. C. Bevin, H. M. Valentine, Charles J. Jennings, Dr. Henry Macdonald, Miss C. Stilwell, Miss B. M. Chapman, Dr. Samuel D. Nutt, C. B. Reynolds, William P. Thompson and Miss Aline Osborne.

HEAVY THE CLOUDS
AND DREARY THE DAY.

Awarded Alce Cup in General Competition.
Brooklyn Camera Club.

Wm. H. Zerbe, Jr.

Metropolitan Camera Club.

This flourishing club gave a housewarming, reception and progressive euchre at its new quarters, 100 and 102 West One Hundred and First street, on Monday evening. About 200 friends of the members attended.

The euchre prize for ladies—a folding camera—was won by Miss Carrie Cook, and the men's prize, a nickel-plated flash lamp, by Louis Adrian. At the close of the game refreshments were served, and several flashlight pictures were taken by President Curtis Bell. Dancing was indulged in.

The rooms of the club are being rapidly furnished, the studio is now ready for use and equipped with a five-tube Cooper-Hewitt light, the largest made. This will enable the members to make portraits at all hours independent of daylight. The membership is now close to 100 and it is hoped this will be doubled before the summer is over. The initiation fee is but \$2.00 at present, but will be materially increased at an early date. Now is the time to send in your application.

S. C. BULLENKAMP,
Secretary.

AWARDS IN MONTHLY PRIZE PICTURE COMPETITION.

Of the entries received during March the classes were so varied that the award has been divided as follows:

The first prize of \$3.00 is given to "Easter Morning" by Jos. R. Iglick, 29 Asbury Street, Rochester, N. Y. Mr. Iglick also closely seconded himself with "A Winter's Twilight," which only lacks a little breaking up of the smooth snow and longer exposure to show some detail in the tree trunks to make it a perfect landscape. His "Pull 'em in Boys" has better tone values and is a very praiseworthy genre composition.

\$1.00, "After a Day of Toil." Mrs. J. C. Sheridan, Meshoppen, Pa.

\$1.00, "A Portrait," by Dr. C. H. Gard-

ner, U. S. Marine Hospital, Key West, Fla.

"Macedonia Valley" and "Kent Falls" by Geo. Henry Smith deserve mention as being two photographs showing excellent technical skill, but simply transcripts of nature with no striving after pictorial effect. The same applies to Albert F. Smith's "A Cooling Draught," also Wm. L. Gradt's "Out of the November Winds" and "In From the Fields" (both of which are under-exposed, painfully sharp, and lacking in pictorial quality.)

So that entries may be of one class we announce that the May prize of \$5.00 will be given for the best genre picture received on or before April 25

AFTER A DAY OF TOIL.

(Joint Winner of March Prize.)

Mrs. J. W. Sheridan.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol, Tioga Centre, N. Y.

CAMERA WORK No. VI. may be called the Coburn number, although it includes pictures by Cadby and Post, in addition to the six examples of the work of that, perhaps, youngest of the Secessionists. That they are all up to the Secession standard goes without saying, else they would not be here, nor is it any derogation to previous numbers to say that the pictures in this easily hold their own with most of those that have gone before.

Nor is the reading matter behind, indeed it is on the whole a little above the usual mark. Caffin's appreciation of Coburn's work is instructive; and the same may be said of Hartman's "On the Lack of Culture," and his criticism of some of the pictures in the exhibition of the work of the Secession and that of some others at Pittsburgh; although we hardly see the value of his story of the broken plates. Warburg's "Photography and Natural Selection" will be read with profit, as will "Painter's Impression of the Washington Exhibition," by Moser; although we feel inclined to protest against his applying the name "Camerist" to the pictorial photographer. We also bespeak particular attention to "Some Thoughts on a Wood," by Will. A. Cadby; and indeed, may say at once, that taking it all in all, *Camera Work*, No. VI., is what its founder and editor intended it to be, an educational agent for the advancement of pictorial photography.

* * *

THE PITTSBURG EXHIBITION we have already noticed, and now we have to thank Alfred Stieglitz for an Edition de Luxe copy of the catalogue which we highly value. It is illustrated with seven photo-gravures printed on Japanese tissue from plates loaned by *Camera Work*, and we understand that at the time of writing there are still a few copies for sale at the price of \$2, which is in the truest sense "nominal," considering that the pictures include examples of the work of Stieglitz, Steichen, Käsebier, Adamson, Keiley, White and Coburn.

* * *

CAMERA NOTES, the last number of the sixth volume, and the last that is likely to appear for some time at least and the last that can ever come with the aims and objects and in the style of the first five and the beginning of the sixth volume. The

notice that "The publication of *Camera Notes* is discontinued with the present number" will not come as a surprise to those who know something of the inner-working of the concern, nor is it any serious detraction from his successor to say that those who know Mr. Stieglitz knew how impossible it was to fill his place.

One can hardly expect much from a farewell number, and if he did he would surely be disappointed, as aside from the frontispiece, a really fine picture by Eickemeyer, there are little in the illustrations comparable with those of former numbers. Nor is there much of value in the reading matter, except perhaps a fairly good article by Sidney Allan, the proceedings of the Club and an account of the new Club Developer. Like a discontented one who slams the door behind him, the editor takes a parting kick at photographic magazines in general, saying little good of the American and a good deal of ill of the British; with no effect on either beyond the inducing of a smile. "R. I. P.," then, *Camera Notes*. You did good work in your day, and your six volumes are amongst the most valued of our possessions; although our regret at your demise is lightened almost to obliteration by the knowledge that the work you did so well is being, if possible, still better done by your successor *Camera Work*.

* * *

WITH THE CAMERA, the monthly circular from the Illinois College of Photography, tells of a rather unique group recently photographed in the College Skylight. It included one representative from each State in the Union, and one representative from each of six foreign countries. We should like a copy of that photograph.

The writer of the circular speaks appreciatively of a portrait lens 15 1-5 in. focus that has been bought by a number of the students, and of the excellent work that he has seen done by its front element. Some of the best portraits that have ever been made in Britain, and that are being written about still, were made with the front lens of the ordinary portrait combination. One reason for the appreciation is the greater length of focus of the single element; 15 inches being too short for the best effects on a 10x8 plate. The best portrait photographers have always

maintained that for any size of plate the lens should not be shorter than twice its longest length, twenty inches for a 10x8. Speaking of lenses, we *do* wish the college would teach its students that to speak of lenses by the plates that they may cover with them is meaningless; and that the only way to convey a correct idea is to speak of the lens according to its focal length.

The circular also gives a good hint as to the best way of dealing with white drapery in portraiture, and tells of the addition of another professor in the photo-engraving department; Dudley K. Ladd, who in addition to photo-engraving, is also an adept at three-color work. We hope soon to have an opportunity of showing an example of the work of some of the students, the Principal having kindly promised to lend us a block for the purpose.

* * *

PHOTO-MINIATURE, No. 58, deals with "Outdoor Portraiture," but we fear that those who read it will be likely to ask *cui bono*. But it makes up for lack of interest in its title rôle by an interesting Postscript to No. 22, the gum-bichromate number, in which the whole process is made as plain as a pikestaff; and the photographer that cannot make, from the information it gives, prints in every way satisfactory had better turn his attention to something else. If we had our way, every photographer with brains enough for pictorial work would turn to the making of small negatives, enlarge them to say, 12x10, or 20x18 as paper negatives for printing by the gum-bichromate method, and we could recommend no better teacher for the latter than is to be found in The Photo-Miniature, No. 58.

* * *

JOURNAL OF APPLIED MICROSCOPY, &c.—Although with no very close connection with photography this interesting magazine has long been a welcome visitor to our table as it must have been to all interested in the microscope, and therefore we regret that its publishers, the Bausch & Lomb Optical Co., find it desirable to devote the energy and ability that hitherto have been given to it to another department of their immense factory; and with the last number intimated the suspension of its publication.

* * *

ARTISTIC RETOUCHING.—By Miss Clara Wiseman, H. A. Hyatt, St. Louis, Mo. Price, \$2.50, prepaid. This new addition to photographic literature is not, as the name implies, simply a treatise on retouching, but a book that will be read with profit by all photographers and especially by the

professional who wishes to improve and understand his work. Besides describing the most approved methods of retouching the negative it contains chapters on art, character, pictorial composition, style and individuality, written in plain and readable style by a lady who is well qualified to speak with authority on the subject.

* * *

THE SENECA CAMERA COMPANY'S catalogue is the first to reach us this season. It bears a fine reproduction of their No. 9 model embossed and stamped in natural colors on the cover. The Seneca Camera Co. announce that they have leased the finely equipped Gundlach factory and under new and experienced management hope to merit a large share of the season's trade.

* * *

THE SCIENTIFIC LENS CO., 714 East One Hundred and Sixty-sixth street, New York, send us a platinum portrait of the veteran protographer, Mr. Geo. G. Rockwood, taken with their new "Ocular" lens. The picture is reproduced herewith and we regret that time would not permit of having the plate re-made. The engraver has etched out most of the detail in the high lights and lost the beautiful plastic effect and correct color values of the original print. As the reproduction is intended to show the peculiar qualities of the lens we are compelled to say that the half-tone plate gives but a faint idea of the picture itself, which is from an unretouched negative.

The "Ocular" lens is a new power in the hands of the portraitist. For large heads it is especially valuable and it is being used with great satisfaction in a number of leading studios. The feature of the lens is that it travels during the exposure and like the human eye focuses itself upon the various planes of the object. The resulting negative and print is equal to the image as seen by the eye with all its softness and plastic effect.

In the words of M. Rubens, president of the Scientific Lens Co., "All the leading lens manufacturers have produced lenses with a singular or stationary focus. Not one of the manufacturers has made a lens where all the color rays come to a focus at the plate, their lenses all showed an over correction for a singular ray, which always shows itself on the unretouched negative, by extreme sharpness of the eyes and its surrounding imperfections of the skin and wrinkles, wormlike appearance of the hair and beard, whilst the ear, part of the hair, shoulder and whatever is out of reach of the focal point of the lens is unsharp and not as the eye sees it. In order

to make the print pleasing to the eye, retouching was resolved to, which in many cases destroyed the life like appearance in the photograph."

This is what the "Ocular" lens is supposed to remedy and it is our intention to give it a thorough trial and report again in an early issue.

PORTRAIT OF GEO. G. ROCKWOOD.

Made with "Ocular" Lens traveling 3-16 inch during exposure of 8 seconds
skylight closely curtained.

THE attention of our readers is directed to our advertising pages, where several new things will be seen. The Kodak Enlarging Camera, which received mention last month, should be a desirable addition to an outfit at this season of the year. Make your wintery landscapes with a pocket kodak and print your $6\frac{1}{2} \times 8\frac{1}{2}$ pictures in the warmth of your room; much more comfortable than lugging around a large camera. Then there is the Seed Non-halation Ortho plate, which you will notice bears a high recommendation and is well adapted for the most exacting work.

* * *

THE SENECA CAMERA COMPANY of Rochester, N. Y., issue a neat little booklet describing their film pack attachment for all models of Seneca cameras.

* * *

HEALTH IN LAKEWOOD.

While it is true that Lakewood air is a most pleasant blend of temperate mildness and balsamic fragrance, it would probably be going too far to claim for it any particular medical properties. The place is laid out upon a light and sandy soil which speedily absorbs all moisture; the air is dry and untainted; the system of drainage is modern, and the water supply is from artesian wells six hundred to seven hundred feet deep. As to temperature, there is a comparative warmth of eight to ten degrees over New York City, sixty miles away, doubtless due to the shelter of the pine forests which surround the place for miles.

What is a more direct factor of the healthful conditions found here by visitors is a total variance of habit which in Lakewood keeps out of doors people who are indoors when at home. The world is not roofed over here. Men and women who come here physically out of tune, play at golf, drive, ride or walk; breathe pure air, exercise comfortably and sleep well.

And good health comes as a logical result. Life in the open was ever a healthy life, and the man or woman of the city, tied down to a daily régime of close office hours or social obligations which are exacting and wearying, comes here to change all these habits and live naturally.

A postal to C. M. Burt, General Passenger Agent, New Jersey Central, New York City, will secure for you a Booklet on Lakewood. Send for it, it will be worth your while.

AMERICAN LANTERN SLIDE INTERCHANGE.

Nearly all the new sets of slides for the season of 1904 have been completed and are in circulation. One additional new club has been admitted "The Athens (Pa.) Camera Club," represented by Mr. Irving K. Park, which submitted a set of slides early in March.

The California Camera Club stated in our previous report to have failed to qualify, has since qualified by sending a new set of slides for this year, quite varied and interesting as to subjects. The addition of these slides will enable the general manager to complete an eleventh box forming a new set of one hundred slides to be entitled the "Athens, California and Pittsburg" set, soon to be in circulation.

Considerable interest on the continent is being taken in American slides, communications recently received from Mr. George Peck of Amsterdam, Holland, and H. Wurtz, President Société Photographique of Douai, France, state that the sets of selected American slides circulated among foreign clubs there, have been greatly enjoyed and appreciated and that they will soon send to this country for circulation among our clubs here new sets of slides illustrating scenery and people in their respective countries.

Before the year is over there is likely to be two additional foreign sets of slides in circulation.

Box No. 11 of foreign American slides has recently arrived from Amsterdam, Holland, and will be distributed among the several contributing clubs. A fresh box of one hundred selected American slides is in preparation to be known as box No. 13 which will soon be forwarded to Amsterdam, Holland.

This international interchange of slides is interesting and instructive, bringing as it does variety of subject into the collection of American sets, placing foreign and American work in comparison with each other in a way that is both useful and advantageous.

Clubs and societies may enjoy the privilege of the use of these slides by submitting a set of not less than fifty slides and the payment of an annual fee of ten dollars.

Further information can be obtained from the General Manager, Mr. F. C. Beach, 361 Broadway, N. Y.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

Preserving the Gloss on Prints.

CHARLES A. ANDERSON desires a method for mounting gelatin chloride prints so that they lay flat and smooth and still retain their gloss, the same as when they come from the ferrotype tins. If such prints are simply mounted dry the edges curl up or they are not smooth on the mount, and if mounted wet the gloss is lost. Just before putting on the ferrotype tins treat the prints to a bath of:

Water. 9 ounces
Formalin. 1 ounce

The prints are left in this formalin bath for three minutes and are then washed in three changes of water and then squeezed to the ferrotype tins in the usual manner. When dry the prints may be dipped in water and mounted in the usual way without any injury to the gloss. If any of the paste gets on the face of the print it may be removed with a damp cloth without injuring the gloss. Prints may be treated with the formalin bath as soon as they are sufficiently washed or they may be dried and treated at any subsequent time. The one thing necessary is that the prints shall be put on the ferrotype tins as soon as they are treated with the formalin and washed. In mounting the prints they should only be moistened enough to make them lay limp.

Sensitizer for Cards or Paper.

A. HUTCHINSON.—A good method of preparing home-made picture postal cards or paper is to coat with a solution of:

Water. 5 ounces
Ammonium chloride. 50 grains
Gelatin. 5 grains

When dry the cards or paper is sensitized in a solution of:

Distilled water. 1 ounce
Nitrate of silver. 45 grains

This bath should be neutral. Both in coating and sensitizing, it is best to float the card on the solution or the solution may be applied with a flat brush.

The Ultimate End Suggests the Means.

WILLIAM PICKERING.—There are many classes of photographs, and from what you tells us of the one you send,—that it sells well and there has never been a complaint regarding it, we could have told to which

it belongs without seeing it. The general public, those who buy such photographs, have not yet been cultured to the extent necessary for the appreciation of photographs that are really works of art. They want full value for their money, everything from corner to corner to be equally sharp and well defined, sharper indeed than they can be seen by the unaided eye, and as you wish to sell you are wise to employ f-32 and do what you can to please them. But, in most subjects at least, f-32 is fatal to real art work and destructive to what should give the appearance of the essential atmosphere. So long as you want prints for sale you cannot do better than you have been doing, but when you are aiming at something in the line of art you had better look to greater simplicity, one objective point or object with all else leading to it, but without attracting particular attention, and instead of your favorite f-32, something nearer to f-8 or f-11.

While, as a rule, formulæ is suggestive rather than imperative, its regulation is necessary where particular effects are desired on certain so-called gas-light papers. On the paper you are using anything from black to a red may be secured by suitable exposure. Comparatively short exposures give blacks, while very long gives red, and of course the developing solution must be arranged so as to develop those exposures. Find the exposure suited to give blacks with a normal developer, say, that recommended by the maker of the paper. Then, give, say, twenty times as long and modify the developer by the addition of bromide or other retarder, so as to develop an image in a reasonable time and you have it. We should gladly make the experiments for you, but at present we have neither the particular paper nor the time; although we shall keep it in mind.

Mixing Developing Agents.

H. BERGER, JR.—Why do you want to mix pyro and edinol, surely either is good enough for any purpose? If you *must* mix them you cannot do better than take the pyro developer you mention and substitute, for one-half of the pyro an equal quantity of edinol. You had far better stick to the formula recommended by the maker of the

plates till you understand developing and developers sufficiently not to need to ask such questions.

Mounting Prints on Glass.

E. B. PORRS.—We hardly know what you mean by "mounting medallions on glass, also making same adhere to glass and frame," but think you may find a sufficient answer in the reply to Bert Healy, on page 144 of our last number. If not, write again and more explicitly. But before doing so please see the notice at the head of this column.

Tank Development.

W. DONAGHJO.—Any ordinary developing solution needs only dilution to make it fit for "tank development," the degree of dilution depending on the length of time the plates are wanted to be in the tank. The following may be tried, we find it answers admirably:

Edinol 25 grains.

Acetone sulphite 50 "

Sodium carbonate (crystals) 240 "

Water from 25 to 50 ounces.

Instead of the acetone sulphite 240 grains of sodium sulphite may be used, and should be a trace of fog from five to ten grains of potassium bromide may be added, although we have never required it.

Over-Exposure and Its Control.

W. A. JAMES.—While it is well known that a good negative may be developed on a plate that has received many times what would have been sufficient, twenty, thirty or even sixty times; we do not suppose that any one unless for experimental purposes would think of going anything like so far astray; and in urging error on the safe side, we were perhaps thinking of our own method of giving say, one second, while under the same conditions others were giving only a half or a quarter; never surely to such an extent as bring out the "first appearance" in a flash, and if it did so we should most certainly know that our developer was much too strong in the alkaline ingredient. If with a developer containing not more than three grains of reducer, and fifteen grains each of the alkali and sulphite, the image flashed out almost immediately as you say, there could be no question as to a very considerable over-exposure, although it might easily be corrected by any of the ways you suggest. We should take the plate from the tray and rinse it in plenty of water; add a quantity equal to that in the tray, of water and a quantity of reducer equal to that originally in it, and return the plate to the solution; and probably also a few

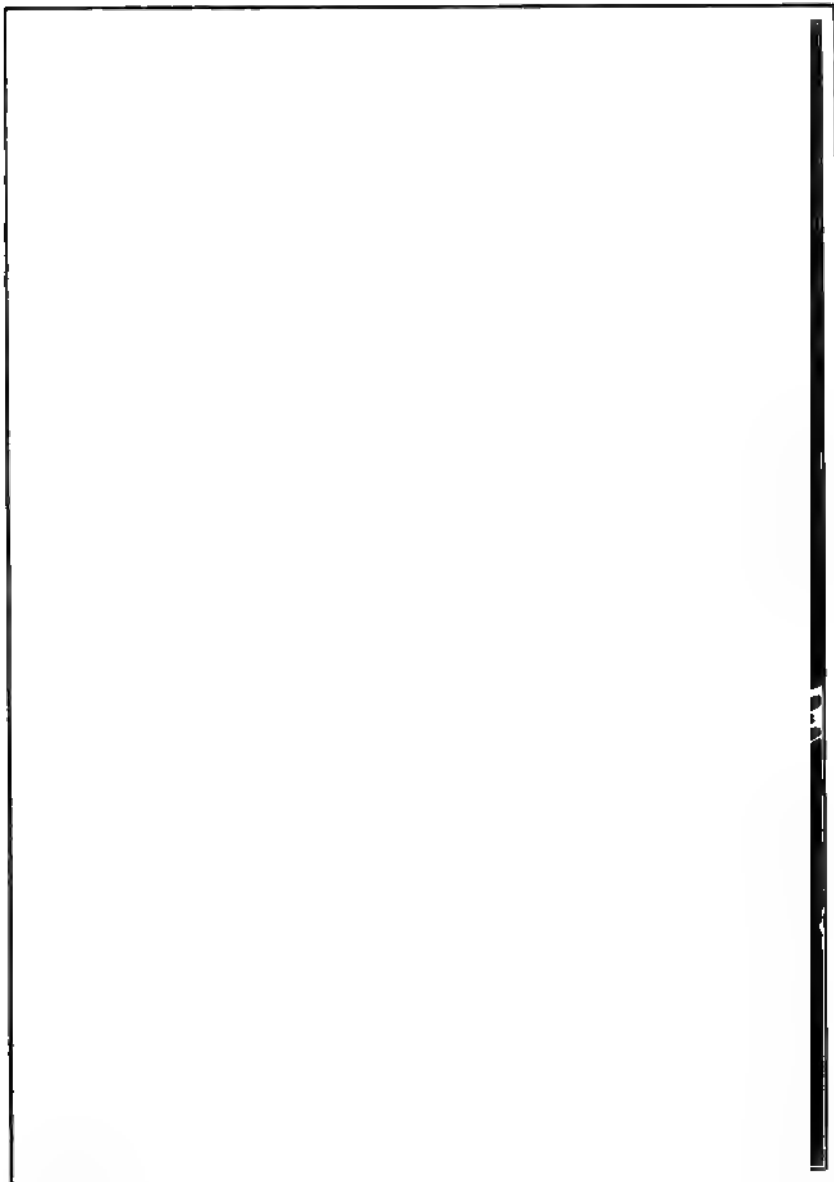
grains of bromide, after which we should expect development to proceed all right. The appearance of the image on the back of the plate is no criterion as to the progress of development, as it depends on the thickness of the film; with some development is complete before there is a trace, while with others it is as visible on the back as on the front. When it does appear, however, development should be stopped as soon as the higher lights show, as longer action only makes the lesser lights equal to the higher, giving the "soot and white-wash" so often seen and so objectionable.

Printing in Clouds.

C. P. DUNHAM.—You will find all needed information as to the printing in of clouds in the leading article of our August number for 1903. "Trees and telegraph poles" in the sky need make no difficulty, cloud negatives being generally so thin as to print sufficiently without to any appreciable extent making them darker. If you don't succeed to your satisfaction write again, but with ink, please, as our eyes are not so good as they once were.

Exposure, Development, Etc.

OTTO REIDL, JR.—(1) The increase of exposure for the screen mentioned depends largely on the plate, and can be found only by experiment. With the orthochromatic plates we are using at present it is about six times. (2) We have little faith in the oft quoted statements to the effect that one particular reducer admits of a shorter exposure than another, as, so far as we have been able to see, all are very much alike, differing mainly in the time occupied in doing their work. (3.) We don't know anything about the difference between potassium and ammonium sulphocyanide, never having employed either, but may say that the possible color of the prints depends on the negative more than on the ingredients in the toning bath. (4) The statement that any particular mixture of hydrochinone and ortol, or indeed anything else in the developer gives to the landscape just the atmospheric effect seen when photographed should be taken with any quantity of salt; and places such other statements as the author may make in the doubtful list. You may take it for granted that there is very little difference in the results whatever developer you use, provided you make the best of it; the formulæ, as we have often said, being of far less importance than the way in which it is used. The "rolling stone" applies to the developer as well as to those who use them, he who goes from one to another will never do much good, or not as well as he who sticks to one.



**"THE HOME
OVER THERE,"**

First Award, Genre Class.

Mrs. J. C. Sheridan.

"I'll soon be at Home, Over there,
For the end of my journey I see,
Many dear to my heart, over there.
Are watching and waiting for me."

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ARRESTING DEVELOPMENT ON A SENSITIVE SURFACE
AND RESENSITIZING

BY SIR W. DE W. ABNEY.

THE writer has had occasion to have lantern slides made from some wet plate negatives taken in Egypt nearly thirty years ago. In the days when these negatives were taken, it was no uncommon thing for the skies to be painted out with lampblack—and it required a firm hand and a fine brush to do this inartistic operation—and to insert clouds from other negatives in the prints. Those who practiced the wet plate will remember the difficulties that existed in getting a thoroughly even density in a sky in which there were no clouds, more especially in a hot climate such as Egypt in October.

In slide making it was found on the screen that there was much to be desired in the way of toning down the sky, and Mr. Bradfield, who made the slides for the writer, adopted the plan of exposing the gelatine plate for the necessary time in the camera, and developing it to its proper density. Instead of fixing it, he washed it very thoroughly under the tap, and, having shaded the landscape, put in clouds by "contact printing," though there was not absolute contact between the wet film and the positive. He then redeveloped, and got traces of clouds sufficient, indeed, to tone down the excessive white of the skies.

If this answered with a lantern plate, it ought to have answered with an enlargement on bromide paper; but if the same procedure were followed, the sole effect was that the clouds were absent on redevelopment.

and the density of the landscape was increased. Arguing the matter out, it appeared that the paper was the sole difference in the two cases. The paper apparently held traces of the developer, even after considerable washing, and the development had not been arrested.

There is some doubt whether in the case of the lantern plate the density of the image had not been increased by the subsequent redevelopment, but that need not be considered for the moment.

An endeavor was made to obtain a developed image on a sensitive surface which would not take further development, unless additional exposure had been given it.

It is a good many years ago since the writer published in the *Philosophical Magazine* an account of a series of researches on "The Destruction of the Photographic Image" by chemical means; but these old experiments came to his aid. Amongst other chemical agencies, he found that nitric or hydrochloric acid would completely remove the traces of previous exposure, and that when well washed the sensitive film could be re-exposed and the second image be developed without any trace of the first appearing.

As long as there is development going on, there is without doubt some trace of the photographic image—latent image it is sometimes improperly called—remaining; and hydrochloric acid, if applied, would be able to destroy such remnants of an image, and also destroy the attraction of the freshly deposited silver, which goes to form new developable sub-bromide. Hydrochloric acid diluted to a strength of 1 in 80 was prepared, and when an exposure for an enlargement on bromide paper had been made, the image was developed with ortol to proper density, washed, and then flooded with the hydrochloric acid solution, and well washed. An exposure of the sky to a cloud negative was then made, and the developer was again applied.

The first developed image gained nothing in intensity, but only a very faint trace of the second exposure became visible. It is probable that the paper still retained some faint trace of the acid, and that almost as fast as the image was formed it was destroyed.

Indeed, this is not hard to prove. It is only necessary to tear such exposed paper in half, and to develop one-half immediately and the other after a lapse of a few minutes. The one may show traces of the second exposure, and the other will not, since the acid has time to act. It became evident that before the second exposure was made, the acid ought to be neutralized by some salt which had no effect, or but very slight effect on the developer. Such a substance is found in the bicarbonate of soda.

After the acid had been applied, the paper was washed in a couple of changes of water, and a weak solution of bicarbonate of soda applied. After two or three washings with water, the paper was exposed to the cloud image. This time when the developer was applied, the clouds appeared

Members' Exhibit
Camera Club, New York.

STUDY.

Dexter H Walker.

properly and no increased density of the first image was obtained. In other words, the surface on which one image had been developed was ready to receive another. The use of this procedure is pretty obvious, as it enables the operator to shade the developed image whilst the second exposure is being given, more especially when the enlarging camera is in the dark room. It may be useful in other ways than in merely printing in clouds. The print, of course, was fixed in the usual way, and washed.

It is as well to wash fairly well after the first developer has been poured off from the print, and before the hydrochloric acid is applied, as, if not, the traces of developer left on the paper show themselves by the evolution of sulphurous acid from the sulphite, which perhaps might to some extent attack the image.

It may be stated that the second exposure has to be some four or five times longer than that required for the first exposure, the sensitiveness of the bromide having naturally decreased. This is not peculiar to bromide on paper, but is found to be the case with those plates which the writer has tried. For some subjects, of course, a slow plate is an advantage, and this might be the means to be adopted where only rapid plates are at hand. It must be mentioned, however, that treatment with mineral acid *may* cause frilling. This can be avoided by using it very dilute, washing well, and neutralizing, as explained.

The use of nitric acid is forbidden by the fact that it attacks the silver image. It is believed that hydrochloric acid is the safest acid to use, though oxidizing agents are effective for the purpose.—*Photography*.

THE CINEMATOGRAPH is being successfully used by Paris surgeons for the novel purpose of exhibiting to medical students how typical surgical operations should be performed.

COPYRIGHT IN ARCHITECTURE.—Photographers interested in architecture had better keep their eyes open to a movement in France, which, if successful there, will probably find its way here. It is a claim by architects for an act giving them a copyright in such buildings as they may design, and to an extent that will prevent the photographing and sale of such photographs without their consent and with the payment of such fees as they may desire for permission so to do.

Whatever may be done as regards private buildings, it surely never can come to pass that buildings belonging to the nation, or even the churches for which the money of the people has been paid, including fees to the architect who designed them, can be forbidden to the photographer or the artist.

Members' Exhibit.
Camera Club, New York.

A. Radclyffe Dugmore.

A WINTER STUDY.

FLOWER PHOTOGRAPHY.

ACCORDING to the Photo Editor of the *Queen*, Flower Photography, even at its best, is a little disappointing. It is something like making known to each other two friends, each of whom one values oneself, but who, nevertheless, find each other uncongenial. It is one of the limitations of the process that the delicate colorings, the exquisite fragility, the elusive and indescribable charm of the lovely flower faces are unrepresentable by the camera. They may be suggested more or less truthfully, but that is all. The beauty of form and the graceful manner of growth are the only beauties which can really be said to be faithfully portrayed in the resulting picture. Consequently, these two particular features are the ones to be chiefly studied. To photograph the flowers growing amidst their natural surroundings is undoubtedly the most satisfactory way of presenting them. Tall slender foxgloves in some not too shady nook, a branch of apple blossom on the tree, a tall, sturdy, seeded poppy—all these may more or less fulfil one's ideal and appeal to the imagination. This is, however, a method which is not always available. Secondly, there is the possibility of attempting to simulate natural growth by the aid of various cunning devices, such as cruel pins and hidden wires, which are very apt to produce a stiff effect, let alone the difficulty of doing away with the undesirable shadows thrown on the background, which are apt to intrude themselves and detract from the realism. Then comes the "arrangement" of the blossoms in more or less artistic fashion, according as one may have been gifted or otherwise with talents in this direction.

The English method of massing flowers in shapeless bunches is, frankly speaking, artistically impossible, especially from a photographic point of view. The color is, of course, lost; of form there is none visible, while any grace in the manner of growing is quite destroyed. The Japanese, on the contrary, in their arrangement of flowers and branches, proceed on entirely different lines, and their methods, following as they do the manner of growth, and preserving the beauty of outline, are well worthy of study by the flower photographer. The principle lying at the foundation of all their teachings is to give as far as possible an appearance of natural growth to the flowers and branches employed in the carrying out of the design. This, too, in spite of the fact that the whole process is ordered by a purely artificial and arbitrary code of rules as to the direction the curves may take, the height of the vessel in proportion to the length of the flower stalks, and the various seasons and occasions when certain plants may suitably be used.

The part of their system particularly applicable to photographic work is their ingenious manner of fixing and otherwise supporting the stalks of

the flowers so as to give them the appearance of springing from the surface of the water in an absolutely life-like manner. This is done in various ways. In the case of small-necked receptacles little pieces of wood are cut to fit tightly across the mouth, and between these the stalks are wedged. When shallow bowls are employed coils made of narrow strips of lead are placed at the bottom, and in these the flower stalks are fixed, and made to take any desired direction, each bloom rising separately, and thus displaying its own characteristic beauties and manner of growth. At the Japanese

Members' Exhibit
Camera Club, New York.

From a Gum Print by
J. M. Drivet.

APPROACHING STORM.

curio shops there are also to be bought various other little devices for serving this same purpose, such as sheets of perforated copper, bamboo rings attached to pieces of wood, small bronze tortoises, and so on. It is an advantage of this method that it lengthens the life of many cut flowers in a most wonderful fashion, especially if any woody stalks are peeled where they come in contact with the water. Even when it is not intended that the receptacle shall itself enter into the composition of the photograph, this

method of supporting the flowers is a useful hint. All photographers who have tried to picture the more delicate flowers, or some of the flowering tree branches which quickly fade when not in water, have suffered disappointment through seeing the frail petals of their models relaxing their lovely curves before the arrangements could be completed.

SIMPLICITY.

BY ARTHUR SMITH.

IF there is one lesson that beginners in photography need to learn more than another, it is that of simplicity and concentration. The beginner's usual aim is to get as much on his plate as possible; or, if he should allow his choice to fall on a small subject, his desire will be to get all the detail that his lens will give him.

It is difficult for the novice to realize that a view of an extensive valley scarcely ever makes a picture, or that one tree with an effective lighting is more pleasing than a view of the whole forest.

In almost every class of pictorial photography the most successful results are those with most simple subjects. To the beginner this may seem astounding, yet, if he looks through all the *Photograms of the Year* that he may have, he will find that those illustrations which give most pleasure are from photographs whose subjects and lines are so simple as to make him wonder what makes them so attractive.

It is in landscape photography that the temptation to take more than is good for the ultimate success of the picture is strongest. A valley full of pictures will be taken because of its bright play of color, a whole irritating glade of trees flecked with sunshine will be photographed, where one tree, with the clinging ivy and bracken at its feet, would be restful and charming; a long stretch of river, like thousands more, where a little bend or pool would make a picture different from any other, and possessing pictorial possibilities. These are amongst the first pitfalls into which a beginner stumbles in his endeavors to make pictures.

In figure and genre studies, too, the lesson of simplicity and concentration needs to be learned. I well remember my earliest attempts at genre pictures. They were miserable failures, because they included the wall paper, the furniture, and any other thing that happened to be present, with the result that so confused was the figure with the background and its surroundings that it lost its importance. To be successful in this class of work one must subdue the surroundings of the models.

In flower photography, the wise will not attempt to photograph too

much. The principal charm in the portrayal of flowers is in the delicate light and shade, the soft semi-transparent texture of the petals, and their contrast with the leaves and stems. Photographs of whole apple trees, or rhododendrons in blossom, or of great clusters of roses, often disappoint the photographer who was charmed with the color and mass of the originals in Nature. A little spray of blossom, with careful lighting, focusing, exposure, and development, will give results infinitely more satisfactory.

It is said that "Brevity is the soul of wit," and it is just as true that

Member's Exhibit
Camera Club, New York.

From a Gum Print by
L. M. McCormick.

"PAN."

simplicity is the soul of art. By remembering this you may produce photographs that tell their story in an instant, so that the public will not have to look from the picture to the title, and from that again to the picture, before they can tell what it is all about. The simplicity of the work will be its charm, and you will feel that you have solved one of the many problems that lie in your path.

A very little observation will teach that concentration is the key to strength, and that simplicity is the soul of success.—*The Photogram*.

THE OBJECT IN VIEW.

PHOTOGRAPHERS may be divided into two classes, those who photograph for amusement; who take to photography as they would to baseball or golf, or as the "change of occupation"

and so nearly automatic that, within the limits of their ambition, it should be almost easier to succeed than to fail. Nor is their work to be despised. Much has been said against the "button-presser," and perhaps, until comparatively recently, not without cause; but with modern lenses of large aperture and modern rapid plates and films there need be no difficulty in securing satisfactory "records of fact"; records that are for many purposes of more value than when photographed with a view to the pictorial.

Camera Club, N. Y. J. B. Kerfoot.
THE UMBRELLA.

which is the only real rest during holiday times; and those who, with the needs and desires of the first and lower class, have as their ultimate aim the making of pictures that shall be as far as possible works of art.

To the first class very little need be said. The chemist, the optician, and the mechanic have combined to make their work very plain sailing; the two former by their rapid plates and equally rapid lenses have practically obliterated time, while the latter has made the working of the camera so simple

Camera Club, N. Y. E. Lee Ferguson.
A STUDY—IRMA.

Where, however, pictures are the aim and art is more highly valued than record; where the photographic artist desires to reproduce, not the scene as it is, but as he sees it, not to record facts but rather his impressions there-

of, he must set about it in a different way, or in one of various different ways, and as this will appear at what may be called the beginning of the photographic season, its object is to help the would-be picture maker to make his selection.

Taking it for granted that the would-be picture maker aims also at being a Salon exhibitor, and that, with-

hesitation in strongly recommending the latter.

We have said all this perhaps more than once before, but new readers are constantly coming in and the memories of some of the older ones are short, while a good story will bear repeating. The amateur of the earlier times was more enthusiastic than his successor of the present, and joyfully carried loads

Members' Exhibit
Camera Club, New York.

J. Oscar Chase.

MADISON SQUARE AT NIGHT.

out belittling small pictures, large ones are more effective and stand a better chance with the judges, the question is, Shall they be taken direct by taking a camera of the necessary size into the field or shall they be enlargements from small negatives *made on purpose*? We have had considerable experience with both ways and have no

and submitted to inconveniences that would altogether frighten the latter from the field; and, therefore, luckily for him photography, even of the highest class, has been made so easy and so little burdensome that he may put in a whole day with as little fatigue as after a pleasant stroll.

For the making of small negatives

for enlargement the camera may be either a $3\frac{1}{4} \times 4\frac{1}{4}$ or 4×5 , the former being generally employed in Britain, the latter more frequently here, and on the whole, in our opinion, to be preferred. It should be a focusing camera, not focusing by scale but on the

focal length is the most important feature, that being long enough almost any one lens is as good as any other within certain limitations; but for the making of small negatives for enlargement one of the anastigmatic type is desirable if not essential, as the more

Members' Exhibit
Camera Club, New York.

Eduard J. Steichen

MOONRISE.

ground glass as affording greater opportunity for composition, and especially for selective focusing. A swing-back is essential and a rising and falling front a convenience; all else being a matter of taste. The lens, somewhat contrary to our usual teaching, is, in this class of work, of considerable importance. While, for direct work, the

perfect the technique, the better the definition and all other good qualities of the small negative the easier it will be to make from it the large one and to give to it the qualities desired.

Nor must the tripod be omitted. While, under certain conditions of subject and light, it may be possible to make a suitable exposure with the

camera in the hand, such conditions are "like angels' visits, few and far between." A small negative from which to make a large one must be full of the most delicate detail with steep gradation, and at the same time with only the highest of high lights, if such there should be in the subject, opaque;

and by nothing short of *sufficient* exposure can that be secured. Here especially the old adage, "expose for the shadows," must be the law, only instead of "letting the lights take care of themselves," they must be very carefully taken care of in the development.

EXHIBITION OF PHOTOGRAPHS BY MEMBERS OF THE CAMERA CLUB OF NEW YORK, APRIL 13-30, 1904.

BY SIDNEY ALLEN.

Rather a poor showing for the New York Camera Club. Over 260 members and scarcely 20 exhibitors. Absurd! "Well, it is one of our ordinary exhibitions, there is no special importance attached to it," somebody may argue in its favor. That is no excuse. If an exhibition is held at all, it should be interesting enough to make its attendance worth while to the visitor. This cannot be claimed for this exhibition. It would hardly repay the visitor the elevator trip, much less a special effort to reach the club.

If there were any prizes to be awarded, I would bestow them without the slightest hesitation upon L. M. McCormick and J. B. Kerfoot. Each one is represented by three prints. In an old criticism of 1897, I find the following sentences referring to one of McCormick's prints: "His picture would please the artists. It almost looks like an etching. But I prefer a real etching to a photograph that looks like an etching." A photograph should look like a photograph. The same I

may say to-day of his "Beach at Amagansett." He has clung to his standard and I to mine. McCormick strives strenuously for pictorial effects, and often succeeds in realizing them, as for instance in his "Pan." But photographs of this kind never convince. One cannot represent mythological personalities by twentieth century men and women. The limbs of McCormick's "Pan" are not used to nudity and show it plainly. The picture is fairly well composed, only the distance to the left is too blotchy. It does not convey anything, and as "Pan" is intently looking in that direction, one wonders what it is all about. His "Song," a mother and child theme, rather unconventionally treated, is too confused in its composition to afford complete satisfaction, but nevertheless it is not without charm and imbued with a vague sentiment, which is still rare in photography.

J. B. Kerfoot's work has the charm of novelty, and I am glad to get acquainted with it. I like its simplicity

and straightforwardness. He simply says things as well as he can. His "Foxy Grandma" is an excellent character study. "The Umbrella" is one of the cleverest snapshots I have recently seen. The figure is well placed, and the movement well caught. He might have selected a lady of more winsome shape, but as none such passed, and as he most likely did not feel inclined to spend a whole afternoon on the wet sidewalk, as was once the fate of Albert Stieglitz on the *boulevard des Italiens*, he did the best he could. Who will be the first to throw a stone at him? Kerfoot's experiment in double toning, a charming study head, is interesting, but the brown tint of the hair involuntarily reminded me of coffee, and that is hardly esthetic. A picture should not remind one of Muschenheim.

Alfred Stieglitz is represented by the "Portrait of a Child," an old acquaintance which was quite fascinating in its infancy, but which now has lost much of its charm—so we let it pass without further comment. Also Lee Ferguson's title "Irma" sounds rather familiar to me, and Mrs. Kasebier's "Neighbors" have entirely too familiar faces to arouse more than a bland smile of indifference. Steichen has sent his "Moonrise," the print with the painted-in moon, to which I referred in my plea for straight photography. There it hangs in defiance of criticism, and tells its own story. There is a good deal of "bravado" about Steichen. But he is young, and no doubt time will also subdue and chasten him. J. T. Keiley's "Bacchante" has nothing bacchante-like

about it, all I can discern is an improper disregard of values. Clarence H. White is represented by his "Boy With Camera Work," a very delightful go-between a portrait and a genre study. Technically it is the most satisfactory print in the exhibition.

A shocking and yet not entirely unpleasant note is struck by J. Oscoe Chase. He seems to strive for the most unconventional effects. He is interested in freaks of nature, "Luna Park at Night," and weird electrical light effects. He even tries to falsify nature. In his "Nocturne," for instance, he makes a sail (placed plumb in the center of the picture just beneath the rising moon) whiter than the sky, which is contrary to all natural laws. His "Madison Square at Night" is, despite all laughter and criticism it arouses, quite a creditable performance. I admire the way in which he has ignored all rules of composition. It is a fragment of uncouth realism which stands and falls on its own merit, and I am not ashamed to say that I wish more of this kind were done. Not for its pictorial value, but rather for its non-pictorial value, its lawlessness. Understand me right, I would like to launch the question why a photograph must always conform to artistic canons? Why should it not suffice to represent a bare fact as this or that individual sees it, without any obedience to conventional pictorialism? I am convinced that an amateur without the slightest art education, with no knowledge of art whatever, could yet obtain satisfactory results, if his or her way of looking at things were different to the ordinary

run and possessed an individuality of its own. The "Madison Square At Night" is such a picture, and I wonder if Mr. Chase would make others equally suggestive of a new way of interpretation.

Among the landscapes, A. Radcliffe Dugmore's "Winter Study" is particularly praiseworthy. It is broadly rendered and without affectation, which almost amounts to a merit nowadays. Strange that the same man should imitate Steichen's "The Judgment of Paris" in his "Canadian Woods." The three goddesses are all covered up with snow and Paris apparently has donned rubber boots (*vide* the lower dark part of the back) to protect himself against the inclemency of the weather. Other landscapes of merit are J. C. Abel's "Sunlight in the Woods," Lee Ferguson's "Calm of Eventide" (very delicate in tone), W. S. Rossiter's "The Glen," and I. Weil's "Old St. George, Bermuda."

The only artistic figure piece is furnished by Dexter H. Walker. His study (No. 52) is quite cleverly posed. What else is there to say? Oh, I forgot W. P. Agnew's portraits of Sidney Herbert and Father Deshon, both no doubt good likenesses and reliable records of the characteristic traits of two

interesting personalities. J. M. Drivet's "Approaching Storm," a depiction of the skyscraper section of New York City as seen from the East River. The picture seems to please the secessionists. Ordinary in composition, it has been rendered attractive by clever manipulation, and if that is a merit it deserves high praise.

A. Radclyffe Dugmore's bird study is as truthful and delightfully rendered as all his works. We have grown accustomed to it, and look at it as matter of fact, without fully appreciating the patient and faithful observation necessary to produce such simple and telling effects. But I must refrain from further criticism. I have already transgressed the space allotted to me. It seems as if the critical faculty in a man is daunted by nothing. Despite my unfavorable statements at the beginning of the article, I have managed to say more about this exhibition than about others which would be more deserving. My only excuse of this is that a critic is not always able to control his thoughts, and as a poor show at times affords more amusement to his critical acumen than the most excellent exhibition, they are apt to run away with him.

THE CAMERA IN THE SCHOOL ROOM.

DR. E. BROOKS, Philadelphia.

One of the recent important improvements in the means of instruction in the public schools consists in the use of the camera in the school room.

This introduction was begun in our schools in a small way some five or six years ago, several of my assistants, Mr. Kain especially, taking an active

part in it. As the interest grew a number of teachers learned the art of photography, and began to take pictures for the use of their pupils. In many cases they spent a part of their vacations and holidays in obtaining photographs of buildings and places to illustrate geography, history, etc. Several of them visited different parts of our country and Europe, and returned with scores of negatives, which they subsequently developed for the use of their schools. In time a Photographic Society was formed among our teachers, and meetings were held at which instruction in the methods of photography and the preparation of slides was given. The interest thus awakened spread so widely among our teachers, and the demand for pictures to illustrate school work became so general, that it was thought wise to add this means of improving our school work to the Pedagogical Library of the superintendent. This movement has proved a very popular one, and the illustrative part of the library is the one most highly prized by a large number of our teachers. These slides are in the care of the librarian, who loans them to principals on application, in the same manner as the books of the library. She has prepared a catalogue of the slides, which is sent to principals, by means of which they can make their selections.

Of the value of the lantern slides in instruction little need be said. They put a new interest into the subject illustrated, and often transform what was previously only the words of the text-book into a living reality. Chil-

dren are fond of looking at things, and the impressions on the mind through the eye are the most definite and lasting. More eloquent to the child by far than the most well-chosen English, and a more certain method of awakening his interest in almost every branch of study, are the picture representations of the camera. The text-book and the oral instruction of the teacher are a necessary function in the instruction of the school room; but there are subjects in which language has its limitations in conveying a definite conception to the child's mind. Give him a picture of the subject, and at a glance everything becomes clear and distinct, and the impression exists as a permanent possession of the memory. By means of this illustrative teaching almost every branch becomes animate with new life and interest; and the introduction of the camera into school is thus regarded as a real and valuable addition to the methods of instruction in our public schools.

The subjects for which the camera slides are especially appropriate are history, geography, and natural science. Pictures of historical places, great cathedrals, celebrated ruins, and other buildings, including also the portraits of heroes, rulers, statesmen, and other prominent men and women, give a charm to the study of history, and appeal to the child in a way to deepen its interest and make a permanent impression upon its memory. In geography, the picturing of land and water divisions, of natural scenery, of the manners, industries, dress, and cus-

toms of the various people, the world's celebrated natural curiosities, like Niagara Falls, Giant's Causeway, Mont Blanc, etc., give a living reality to these things in the mind of the child. Forms of plant and animal life not available to the teacher or student may be illustrated by slides, which serve as excellent substitutes for the living forms. Indeed, while there is scarcely

a subject which cannot be made more interesting and more clearly understood by means of illustration, there are many subjects included in the course of instruction in which the use of slides become an absolute necessity.

The pictures of the camera, which were formerly used as a diversion, have thus become an important means of instruction.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

Denver photographers had better keep their eyes on their plates, especially if they should be in the vicinity of the Carnolite mines that are likely to be opened soon. Radium, according to Professor Dufour, is capable of acting on a photographic plate in the manner of the Rontgen ray through a slab of granite half-an-inch thick; and Prof. Engel of Denver has succeeded in extracting 1-50th of a grain of that mysterious body from ten pounds of carnotite.

* * *

The following words of wisdom occur in a lecture delivered by W. Fitzjames White before the members of the Leeds (England) Camera Club, and are quite as applicable on this side of the water:

No wise person will venture to deprecate the importance of studying the rules of art and be content to trust to what is called their good taste, for the good taste of an untrained mind is a very uncertain quantity. Genius may here and there establish a few excep-

tions, but they only serve to prove the rule. The majority of men and women require to be taught what they ought to admire, and why they ought to admire it. We may all like, in our own way, what is beautiful, but the most intense sense of pleasure in the perception of beauty is reserved for the trained mind. To copy Nature by a mechanical process can give none of that intellectual delight which is obtained from the consciousness that we have obtained the best possible result from certain given materials; that by putting our mind and our heart into our work we have given the world a truth that it will be the happier for having, and by a creative idea we have increased the perception of beauty for those who have eyes to see it. Emerson says, "Our feeling towards a work of art is exactly proportioned to the amount of man, of mind, of design that it contains." To this I would add: What it contains is what we see in it, and no more.

NOTES.

PICTORIAL PHILADELPHIA.—The Photographic Society of Philadelphia has decided to hold a "Print Competition," the subject being "Picturesque Philadelphia," open to all photographers, although what the award shall be has not, at this time of writing, been decided. Competitors may send in ten prints, framed or otherwise, any time from November 1st to 10th, and the Society reserves the right to exhibit the pictures during December.

The pictures will be judged on pictorial lines by a competent jury, not necessarily made up of members of the Society.

COLOR PRINTING BY ELIMINATION.—Herr Szczepanik, which, according to *The Amateur Photographer*, is pronounced as if spelled Shepanic, is said to have found three colors which, spread in layers on paper, blue, yellow and red, the last being uppermost, appear black, and which when acted on by light are discharged. That is, white light discharges or bleaches all three, and any of the three colors discharges its two, which united are its complementary. The *Amateur Photographer* has this to say about it:

Recently Herr Szczepanik has been busying himself with the direct method of color photography, a method which is direct in the fullest sense of the term, as on the black sensitive surface each condition of color and shade is rendered by like. Thus darkness is inoperative and the original black remains, and white light destroys its reverse or the black, so white remains;

and the same is true of colored lights, each color destroying its complement in the composite black surface.

The black coating of Szczepanik's sensitive paper, if carefully picked up or dissected with the point of a pen-knife, will be found to consist of three colored films, that at the surface being red and those below being blue and yellow. At present the material is not sensitive enough for use in the camera, unless, perhaps, if one were to fix the camera and to allow the exposure to go on from week to week, as Niepce appears to have done in his first experiments; but under the best conditions of Vienna sunshine a contact copy of a colored original has been made in two hours. The color-sensitive paper, a piece of which has been given to us by Mr. W. Gamble, of Messrs. Penrose and Co., is, we believe, to be put on the market before long, so that amateurs will have an opportunity of trying the direct method of heliochromy.

COPYING TRACINGS.—Black lines on white ground, *Veronica* says the following method gives excellent copies, the finest lines sharp and clear on a perfectly clean white ground; and that the paper is sufficiently sensitive to print by the arc light.

Paper is coated with or floated on a warm solution of bichromated gelatine and dried, in which state it will keep good for about a week. It is then printed under the tracing till faint brown lines appear on the yellow ground, and then gently rubbed all

over with moist lamp black. Development is effected by spraying with hot water, the lamp black adhering only to such parts as have been protected from light by the black lines of the drawing.

SLOW PLATES FOR SHORT EXPOSURES seems paradoxical, but their employment is advocated by Kenneth Mees, who gives an apparently good reason for his belief, as will be seen from the following paragraph clipped from *The Photographic News*:

At the Croydon Camera Club on Wednesday week, Mr. C. Kenneth Mees read and demonstrated his paper on "Slow Plates for Short Exposures." He said the title was not quite what he would have chosen, but it would answer his purpose. Mr. Mees showed some very convincing slides illustrating his subject, and, with the assistance of the blackboard, undoubtedly proved that whatever had been the accepted theory as to short exposures with both slow and fast plates, that in the period of under-exposure slow plates gave quite as much detail as fast plates, owing to their non-fogging propensities and ability to stand a prolonged development and also obtain sufficient density. Comparative illustrations on half-tone plates and ultra-rapid plates of focal plane exposures showed a decided advantage in favor of slow plates.

INTENSIFYING BY REHALOGENIZING AND DEVELOPING.—J. S. Teape, in a paper before the London and Provincial Photographic Association, showed how by rehalogenizing, either to a chloride or a bromide, and developing with various developing agents consid-

erable intensification might be obtained, and even the removal of certain kinds of stains that resisted every other known method. The following are the formulæ employed for the rehalogenizing:

TO CHLORIZE.

Bichromate pot.	5 grains.
Chloride pot.	10 grains.
Hydrochloric acid ..	4 minims.
Water	1 ounce.

TO BROMIZE.

Bichromate pot.	5 grains.
Bromide pot.	10 grains.
Hydrochloric acid ..	4 minims.
Water	1 ounce.

The bichromate may be kept ready by dissolving one-half ounce in five ounces of water. Take 50m. of this to each ounce of solution you require. This might be used stronger, but the result would be the same, only it would act a little quicker. The negative is soaked in water, or put direct into the solution. I advise that it is kept for a little time after it is bleached right through. The plate is then thoroughly washed; I have found thirty minutes ample. I then choose the developer according to the amount of increase I require. Any of the ordinary developers may be employed, and as they each give slightly different results it may be worth while to experiment. Metol and hydrochinone are said to give greater density than some of the others.

THE ST. LOUIS FAIR.—We again remind our readers that the club room of the Missouri Amateur Camera Club at No. 1 N. Broadway will be open all day during the continuance of the Fair, and that amateur photographers are invited to make it their headquarters during their stay in St. Louis.

PYROGRAPHY OR WOOD BURNING.

IV—Ornamental Placques.

BY F. W. GAENSLY.



THE accompanying pictures may be enlarged as explained in the last lesson or the worker may use any pictures on which the same style of work can be utilized. The plaques can be of any size or shape. When a picture has been procured or enlarged sufficiently to suit the plaque, trace it upon the

jagged line, deeper in some places than in others, will ruin the effect entirely. In burning the hair, begin where the dark parts should appear with a heavy dark-brown line, gradually growing fainter and finally disappearing as it approaches the parts which reflect the light as in the coil of hair on top of the head (see illustra-

No. 3.

No. 1.

No. 2.

wood with the aid of carbon paper as explained in Lesson No. 1.

In burning a picture for an effect similar to illustration No. 1, hold the pen so that only the side of the point rests upon the wood as when writing with a pencil, and burn the outlines of the face and neck a light brown, keeping the lines narrow and even, as a

tion). Repeat these lines until sufficient depth has been acquired to give the desired effect. When burning the eyebrows avoid having them appear like a black strip pasted on by burning a number of hair lines in the direction the hair of the brow grows until the desired depth is acquired and the appearance will be more natural. Very

little heat is required in burning the shadows on the face and neck in order that they will not end too abruptly but gradually disappear into the high lights.

This may seem difficult at first, but with practice one can shade as well as with brush or pencil and the final effect depends largely upon the shading.

The outline of the nose should be very delicate. The under lip should not appear as dark as the upper one. The drapery over the shoulders consists of many connected lines, burned with the side of the pen, and gradually shading as it approaches the back. The ground work immediately about the picture is left unburned, which gives it the appearance of being framed. Any outline can be used for this effect. The groundwork outside this line should be burned a very dark brown, continuing over the bevelled edge in jagged strips which gives a tortoise-shell effect.

No. 2 is a very attractive head and not difficult to burn, the lines being almost all of the same tone and thickness and ending more abruptly than those in No. 1, making it especially desirable for scholars not advanced in shading. This head is a near approach to Mr. C. D. Gibson's drawings which are indispensable to the wood burner. The lines are all a very dark brown, especially in the hair above the ears, where they should appear in one dark mass to give depth to the work. Be careful that the pen does not burn deeply into the wood when doing work of this kind, as it ruins the effect and surface work with great depth is what

we must strive to accomplish. The groundwork on No. 2 consists of a number of waving bands of dark brown, burned with the side of the pen. They should appear darker in some places than in others, which will be seen to improve the effect.

No. 3 is a little more difficult, having a large amount of delicate shading. The robe, being of thin material, clings to the form, which it discloses almost entirely except where it falls

No. 4.

into folds about the waist and lower limbs, where great care is necessary with the shading, in order to preserve a semi-transparent effect. Do not dwell too long in one place, as your shading will not be even. To guard against failure, use as little heat as possible. This may take much longer, but the reward will be greater in the end. Where the arms are covered with the gauze drapery, burn the outlines very faintly and shade the folds as delicately as possible, or the effect will be lost. Burn the groundwork with the edge of the pen as dark and roughly as possible and then with the point of the pen burn holes into the surface of the wood. The rocky appearance thus produced being very odd. Finish the bevelled edges similar to No. 1.

No. 4 will be found quite simple; very few lines being necessary in a scene of this kind. In burning grass or rushes it will be necessary to turn the plaque bottom side up, as the lines must start from the bottom and be executed very rapidly or they will be too broad and dark. This does not mean to proceed with the work without watching it, for it is absolutely necessary to keep turning the wood every now and then to see whether the proper effect is being produced. The horizon line on the water should be very faint to make it appear distant. The wind mill, housetops and windows should be pretty well browned, but not as deeply as the background work. The sides of the houses are but slightly burned; a little more in some places than others will improve the effect. It

should be remembered that objects in the distance do not require as much detail as those in the foreground, the detail gradually disappearing as the objects recede from the eye. Further information in this line will be given in a future lesson. The trunk and limbs of the trees are burned a mixed brown, disappearing gradually as they approach the ends. The branches are represented by jagged, irregular lines filling in well where the leaves should appear abundant. In the accompanying illustration a rather bare tree is shown, but it will suffice to convey to the scholar an idea as to the effect thus produced. Any style border can be used. The groundwork and bevelled edges are finished similar to those in No. 1.

AMMONIUM PERSULPHATE.

By RICHARD HINES, JR.

I believe it is about three years since this salt began to attract the attention of photographers as a reducing medium, and since that time it has received much notice at the hands of many of the best-known photographic chemists, who have discussed its peculiar properties from various standpoints. The consensus of opinion, as derived from my monthly reading of some eight photographic magazines, appears to be that it is a reducer of high lights par excellence, making haste slowly as far as its attack upon

the shadows of the negative are concerned. There have been some, who in learned chemical dissertations, have scouted at this claim for the new salt, holding that it exercised the same ratio of reduction over all parts of the film. Lately, however, it seems to have been established by means of photomicrography that ammonium persulphate is actually gifted with the selective property in reduction which was at first claimed for it.

It is for the ordinary amateur photographer that I write—not for the

man of scientific attainments, be he physicist or chemist. It is for the man who wants to know how to improve his under-exposed and over-developed negatives that I seek to give some prac-

tical information about this comparatively new engine for the betterment of the work of the average amateur—that class which is so largely in the majority, and who cares very little about the “why,” but delights to know all about the “how.”

Now, although, as I said at the beginning of this article, I have read much in many journals about the action and benefits of ammonium persulphate, I have never yet seen a practical illustration of its action, and though I have used it a great deal during the past eighteen months, I am sorry to say that I have preserved, so far as I can find among my effects, but one example of how the negative looked before I confided it to the tender mercies of the ammonium persulphate.

The two prints sent with this article are from a negative made by my son, Percy R. Hines, of the entrance to the University Hall, at Vanderbilt University, Nashville, Tenn., about 1 o'clock in the morning, after a fall of snow.

The exposure extended over some thirty minutes and was made on an ordinary Cramer plate, no other being available at that time in the morning, so that he was compelled to use what he had on hand.

When he returned home from his vacation the negative fell into my hands one afternoon while rummaging through our den, and recognizing its utter worthlessness in its original state, I concluded that if the high lights could be reduced to something approaching decent tone values that a much better print, and possibly a picture, could be made of the negative. Ammonium persulphate seemed to fit this particular negative to perfection, for it will be seen by the print from the original negative that halation had well nigh destroyed its value for even a “record of fact.”

I gave the negative a thorough washing in running water for half an hour or longer to make assurance doubly sure and be certain that there

was not the slightest trace of hypo left in the film. I then made up a three per cent. solution of the ammonium persulphate and into this I placed the plate. The solution was in a white glass dish,

and I sat by a window on the west side of the house, so that I had no trouble in seeing how the work was progressing, both by reflected as well as transmitted light, without removing the plate from the tray. I kept the solution flowing backward and forward, first one way and then the other, over the film, and was rewarded by seeing the chalkiness of the high lights gradually growing less and less, while the shadows appeared to undergo but little change in comparison.

I finally concluded that the reduction had gone far enough, took the negative out and placed it in a bath of a ten per cent. solution of sulphite of sodium. After allowing it to remain in the sulphite of sodium bath for ten or fifteen minutes, it was taken out and given another thorough washing, and up to this date, there has appeared no material deterioration of the film. Many people of artistic tastes to whom prints from the reduced negative have been shown, have been complimentary

in their estimates of the picture; but it is not the artistic side of the print that is under consideration here; rather the practical side, to give the amateur ocular evidence that persulphate ammonium, when properly handled, will do all that is claimed for it.

A word of caution in closing. Care must be taken to be certain that the washing of the negative to eliminate every trace of hypo has been thorough, as otherwise the amateur will be disappointed by finding brownish spots and streaks on his negative. If you must lift the negative from the dish frequently, be sure to let the solution drain always from the same corner, thereby avoiding chances of having a streaky negative after the reduction is all over. Another caution, and a very pertinent one: Be sure that you get a pure quality of ammonium persulphate from a reputable dealer in photographic supplies. I have got hold of some grades that would effect no more reduction than would so much pure water.

POT HUNTING

By J. PAGE CROFT.

In this pot-hunting period when every one, as soon as he thinks he can make a fairly good technical photograph hurries it off to any side-show exhibition in the hope of getting an award, which, when he does will probably make him lie on his oars ever afterwards so far as improvement is concerned; the following article which we reproduce from *The Amateur Photographer*, and which contains both comfort and caution; should at least be timely.

As soon as a worker begins to feel his feet, the desire to secure awards follows at his heels. The ideal may not be lofty,

but it is very human; and with human nature as it is, will probably continue. It is like having the measles or falling in love; you generally get the one before you are into your teens, and experience the other before you leave them, and the distemper of medal-fever would seem to have to be survived before a reputation can be made.

And it cannot be considered as altogether an unmixed evil. You can't reason with a man who has just secured his first medal; at that particular period of his career he feels he knows everything and will lay down the laws with an assurance

that is in every way remarkable. When, however, his awards run into double figures, their unsatisfying nature begins to dawn on him, and, yearning for something higher, he realizes that even then he is but touching the fringe of the garment.

The great Corot, when in later years he was awarded the Cross of the Legion of Honor, expressed his determination to try and do some good work, or people would think he had stolen it.

Now, art being a question of faith rather than fact, judging must be largely a matter of individual taste; personally in my time I have had the same work refused and subsequently accepted at the "Royal" and smaller exhibitions, and frames which had been hung on the line at the "Royal" have been declined at much less important shows.

You can never tell with certainty what will even be hung, much less medalled, so there is not any harm in trying the varied and varying taste of Exhibition judges.

I have in my own mind a case where the same three judges reversed their own decision subsequently over identical work.

A worker once stated that he felt he had no chance against the amateur of money and leisure.

It has been my pleasure to come in touch with most of the leading workers of the day, and while they are not among the wealthiest of my acquaintances, they are certainly among the busiest.

The compensating hand of Nature seems to withhold from men of sufficient means and leisure the necessary application. A friend who has just inherited a sum running well into six figures, cannot eat even the plainest of dinners owing to an internal complaint. I know a man who runs a coach and keeps up quite a large establishment of horses and vehicles, but is compelled to walk as many miles a day as possible to keep down a serious and persistent threatening of preponderance in the flesh. Any photographic dealer will tell you that it is not the advanced man who is of the greatest profit to him, as this worker spends most of his time in turning out little. The greater portion of the expenses of the emporium are provided by the novice, who, going out on the Saturday, lets off all his plates, develops them the same evening, prints and tones several packets of P. O. P. on the day following, and calls again at the dealer's on the third day for a further supply, regretting that he had been unable to do more owing to his store being exhausted.

The cost of doing good work is comparatively trifling, for much may be learned by visits to picture galleries and a close study of art.

I am on intimate terms with a man who has for a number of years been represented at both Salon and Royal, besides most of the best provincial continental exhibitions, whose entire apparatus—stock, lock, and barrel—would not realize a five pound note.

Now the holding of exhibitions and the arranging of competitions are of course not merely for the purpose of self-glorification, but for the cultivation of progress, and it is as well to handle the matter on its broader lines, i. e., for the encouragement of the many.

Consequently the object is most effectually attained by conditions which embrace the most and thus debar the fewest, for it is when differentiation is attempted that difficulties are created.

Beyond the actual competitors, the destination of the awards is practically a subject of indifference; but it is a lesson of considerable educational value to be able to see the work which has been judged worthy of meriting such awards, and thus a means of progress is offered to many thousands in the study of the successful pictures on the walls or the reproduction in the press.

A multi-medalled print, too, possesses an additional interest in that it has secured a wide approbation from men of probably greatly varying tastes and opinions.

And though the "pot-hunter," whose motives may be no higher than personal aggrandisement, in "trotting round" the one picture rather than endeavoring to do something better, gains the least progress, he himself is the greatest sufferer from his own act.

For even if such a line of action entitles him to little credit, yet he benefits others by enabling them to see work which is considered worthy of emulation, and in so doing is taking a part in the advance, and thus a general progress is maintained.

And even the "pot-hunter" himself must needs work hard and well up-to-date, merely to be successful in "pot-hunting," and the novelty wearing off, will soon realize the hollowness of the pursuit; and turning to that higher line than the popular, will lay himself out to conquer those greater worlds, and ultimately obtain his own share of that progress to which his now riper judgment and discretion will entitle him.

ON DEVELOPMENT IN DAYLIGHT, ETC.

By A. and L. LUMIERE and A. SEYEWETZ.

For a long time it has been sought to do without the dark-room lamp and its colored glasses in the developing room, for the reason that it is difficult to procure commercial glasses which will only pass practically the non-actinic rays, and, on the other hand, because by means of the lantern only a very feeble light is obtained.

The methods hitherto employed have been either to previously stain the coating of the plate, or to dissolve in the developer a suitable coloring matter. It is in this manner that Mr. Ludwig* tints the plate, before putting it in the developer, with a solution of croceine 3B, which stains the gelatine sufficiently to prevent the action of light on the haloid salts of silver contained in the film. This is the method known as "Coxin."

A simpler method, and also an older one, consists of the addition of coloring matter to the developer without permanently coloring the film, the chosen substance completely absorbing the chemical rays, in order that they may not attack the sensitive film.

Notwithstanding its simplicity, this last method has not hitherto been generally used, owing to the difficulty of finding coloring matters fulfilling the numerous necessary conditions. These should not only make with the developer a solution colored to absorb actinic radiations, but should not permanently color the gelatine or provoke fog, or destroy the latent image; further, they should not stain the operators' fingers. The ability to remove the color must be certain, especially if used for the development of papers. It is necessary also that they should be capable of use with different developers without giving precipitates, and without changing color when mixed with the developer or with its additions (sulphite of soda, alkali, etc.)

We have methodically searched amongst the numerous commercial coloring matters for those which fulfil these conditions most perfectly, but have found none that do so absolutely. The following coloring matters possess properties most akin to those stated: Croceine scarlet 3B, phenoflavine, ponceau 6R, uranine, tartrazine. None of these possess the necessary properties in a sufficiently strong form to allow of development of papers with them as a coloration

remains which alters the freshness of prints.

We have also sought for the existence of a non-coloring substance which would destroy the sensibility of the bromide of silver without acting on the latent image, by this means permitting development in ordinary light without the addition of coloring matter. After, however, experimenting on innumerable substances, particularly the different oxydants and reducers, we have found nothing whatever with this property.

We then experimented with colored compounds not having tinctorial properties, properly so-called. After having tried a long series of materials of this nature we have found the picrates dissolved in sulphite of soda to give non-tinctorial colored solutions, and of a color capable of absorbing practically the whole of the actinic rays.

In order to be able to dissolve in water a sufficient quantity of substance we have chosen the most soluble picrates which are not precipitated by sulphite of soda. Those of soda, ammonia, and magnesium realize most fully these conditions. Picrate of ammonia could not be used, as it gives dichroic fog; pure picrate of soda gives equally as good results as that of magnesium, but the necessity of employing soda in its preparation, and the difficulty of obtaining with this alkali a perfectly neutral picrate, makes us prefer magnesium picrate.

Instead of dissolving the picrate of magnesium in the developing solutions it appeared to us more simple to mix this in a dry state in suitable proportions with anhydrous soda sulphite, and to constitute by this means a product which may be used to replace sulphite of soda in the preparation of developers. It is possible also by this means to prepare directly developers suitably colored for development by ordinary light without having to weigh a number of substances as usually required in the preparation of an ordinary developer.

We then experimented as to the most suitable proportions of picrate of magnesium and sulphite of soda for making a mixture capable of being employed for the different commercial developers. The mixture which has given in our hands the best results is the following: One hundred parts anhydrous soda sulphite, 50 parts picrate

*318-193 Patent, June 13th, 1903.

of magnesium. This mixture, used with certain developers in such quantities that the solution may be sufficiently rich in alkaline sulphite, gives solutions too highly colored to enable the appearance of the image to be easily followed. We used with these developers a mixture less rich in picrate of magnesium composed as follows: One hundred parts anhydrous soda sulphite, 15 parts picrate of magnesium. We have called these mixtures under the name of "chrysosulphite," that richer in picrate being No. 1, and the other No. 2.

PREPARATION OF DEVELOPERS WITH CHRYSOSULPHITE.

Developers are prepared with chrysosulphite by simply replacing in the development formulæ soda sulphite by chrysosulphite. We have fixed the best proportions of chrysosulphite for use with the principal commercial developers. Chrysosulphite No. 1 is only employed with the following developers: Metroquinone, metol-hydroquinone, hydroquinone, pyrogallie acid, edinol, eikonogen, metol, adurol, pyrocatechin, ortol. Chrysosulphite No. 2 is employed with the following developers: Diamidophenol (dianol), paramidophenol (paranol) hydramine glycine.

The following formulæ are those which we have adopted with the different developers:

(1) WITH CHRYSOSULPHITE No. 1.

Metoquinone (now Quinomet).

Water	1,000 c.c.
Quinomet.....	9 gr.
Chrysosulphite No. 1.....	60 gr.
Acetone.....	50 c.c.

NOTE.—In all formulæ for Quinomet developer it suffices to replace soda sulphite by the same quantity of chrysosulphite No. 1.

Eikonogen.

Water	1,000 c.c.
Chryso. No. 1.....	80 gr.
Anhydrous Carb. Soda	40 gr.
Eikonogen.....	10 gr.

Edinol.

Water	1,000 c.c.
Chryso. No. 1.....	60 gr.
Tribasic sodium phos.....	60 gr.
Edinol.....	10 gr.

Ortol.

Water	1,000 c.c.
Ortol.....	7 gr.
Chryso. No. 1.....	60 gr.
Anhydrous carb. soda	40 gr.

METOL-HYDROQUINONE.

(In 2 Solutions.)

A.	
Water	500 c.c.
Metol	2½ gr.
Chryso	60 gr.
Hydroquinone	4½ gr.
B.	
Water	500 c.c.
Anhydrous carb. soda	85 gr.

For use take 100 c.c. of A and 100 cc. of B.

HYDROQUINONE.

(In 1 Solution.)

Water	1,000 c.c.
Chryso. No. 1.....	40 gr.
Hydroquinone.....	10 gr.
Anhydrous carb. soda	56 gr.

(In 2 Solutions.)

A.	
Water	500 c.c.
Hydroquinone.....	10 gr.
Chryso. No. 1.....	60 gr.
B.	
Water	500 c.c.
Anhydrous carb. soda.....	70 gr.

For use take 100 c.c. of A. and 100 cc. of B.

METOL.

(In 2 Solutions.)

A.	
Water.....	500 c.c.
Chryso, No. 1.....	40 gr.
Metol.....	5 gr.
B.	
Water.....	500 c.c.
Anhydrous carb. soda.....	15 gr.

For use take 100 c.c. of A. and 100 c.c. of B.

PYROGALLIC ACID.

(In 2 Solutions.)

A.	
Water	500 c.c.
Chryso, No. 1.....	100 gr.
Pyro. acid.....	30 gr.
B.	

Acetone solution.

For use take 50 c.c. of A; 150 of water; 30 c.c. of acetone.

ADUROL.

(In 2 Solutions.)

A.	
Water	500 c.c.
Chryso, No. 1.....	50 gr.
Adurol.....	8 gr.
B.	
Water	500 c.c.
Anhydrous carb. soda	85 gr.

For use take 100 c.c. of A. and 100 c.c. of B.

Pyrocatechin.

Water	1,000 c.c.
Chryso, No. 1.....	40 gr.
Pyrocatechin	15 gr.
Anhydrous carb. soda	40 gr.

WITH CHRYSOSULPHITE No. 2.

Diamidophenol.

Water	1,000 c.c.
Chryso, No. 2.....	80 gr.
Diamidophenol.....	10 gr.

Paramidophenol.

Water	1,000 c.c.
Chryso, No. 2.....	75 gr.
Caustic lithia.....	5 gr.
Paramidophenol.....	10 gr.

Hydramine.

Water	1,000 c.c.
Chryso, No. 2.....	15 gr.
Caustic lithia	8 gr.
Hydramine	5 gr.

Glycine.

A.	
Water	500 c.c.
Glycine.....	15 gr.
Chryso, No. 2.....	60 gr.

B.

Water	500 c.c.
Carb. of potash	40 gr.
For use take 100 c.c. of A. and 100 c.c. of B.	

METHOD OF DEVELOPMENT.

(1.) Development of Plates and Films of Extreme Rapidity.

A.—Development in artificial light.—A sufficient quantity of developer is used to cover the plate with solution to a depth of about $1\frac{1}{2}$ centimetres, about 200 c.c. for a 9x12 dish or a corresponding surface.

The plate is taken from the dark slide in the dark-room, and put directly into the developer. If a special lamp is not available this may be done in darkness.*

Once the plate is immersed in the developer it may be developed in the light at variable distances according to the nature of the light used. The distance should be about half a metre from a candle, one metre from a gas jet, three-quarters of a metre from an ordinary petroleum lamp, or one and a half metres from an ordinary incandescent lamp of about 16-candle power.

Note.—In developing plates of very high sensibility it is not wise to keep the dish at such a distance during all the time of development, but it is better to place it in a less brightly lit part of the dark-room, turning the back to the source of light, and only bringing the dish to the above indicated distances when wishing to examine the plate.

The dish should be slowly rocked during development, care being taken that the liquid always covers the plate. The developing formulæ indicated above have been chosen in order that duration of development need not occupy longer than about five minutes. After a couple of minutes the plate may be taken out of the developing bath, turning the back to the light, examining it rapidly for a second or two by transparency, without risk of fogging. This examination should not be made, however, at a nearer distance than the following: Candle, 1 metre or $3\frac{1}{4}$ feet; petroleum lamp, $1\frac{1}{2}$ metres or 5 feet; gas flame, $2\frac{1}{2}$ metres or 8 feet; electric lamp, 3 metres or 10 feet. If it is necessary to get nearer the light, interpose a piece of yellow glass.

Fixing and Washing.—When development is finished, turn the back towards the

source of light, and rinse the plate in running water; then fix and wash in the usual manner.

Development in Daylight.—Instead of the different sources of light mentioned, development may be carried out by daylight, provided that the sun does not shine in the workroom, and that the blind be drawn across the window by which the light is admitted. Work as far as possible from the window, and have the back turned thereto throughout development. It is not possible, however, without risk of fogging, to examine the plate by transparency, unless an upright glass tank be used. The plates are placed in the bath, washed and fixed exactly in the preceding manner.

(2.) DEVELOPMENT OF LANTERN PLATES.

By reason of their lower sensibility lantern plates may be developed without taking further precautions for the lighting of the room than for bromide papers (see under). For black-toned lantern plates the same formulæ for development may be employed as those given for papers.

(3.) DEVELOPMENT OF BROMIDE PAPERS.

A.—By Daylight.—Two formulæ follow for development of bromide papers that have given good results:

Quinomet.

Water	100 c.c.
Quinomet	0.9 gr.
Chrysosulphite No. 1	6 gr.
Acetone	83 c.c.
10% solution pot. bromide	2 or 3 drops

Diamidophenol.

Water	100 c.c.
Chrysosulphite No. 2	3 gr.
Diamidophenol	1 gr.
10% solution pot. bromide	2 or 3 drops

Development may be carried out without other precautions than keeping the corners of the paper at the bottom of the dish to prevent the paper floating, lighting by the different sources of light, given above, without taking account of the distances indicated for plates. One may approach sufficiently near to the light to follow easily all the phases of development.

Exposure, however, should be sufficient to prevent development occupying longer than about 40 to 50 seconds. The papers are placed in the developing bath exactly in the same manner as plates.

B.—By artificial light.—Operations by this method are carried out in the same manner as for plates. Care should be taken that the corners of the paper are kept at the bottom of dish, as if they are not submerged they will veil quickly. They may be fixed in daylight, employing a fixing bath colored yellow or orange by a little

*An improvised darkroom lamp. A non-actinic lamp may easily be made by placing before a candle a litre bottle filled with a 50/0 solution of Chrysosulphite No. 1, placing to right and left of this bottle two other similar bottles resting against it. This will do instead of a lantern. Under these conditions the back should be turned to the light when lifting the plate from the slide and placing it in the developer.

chrysosulphite. Fixing done, they should be abundantly washed in the ordinary manner until the back is perfectly clear.

Finally, the mixtures of sulphite of soda with picrates, and particularly with picrate of magnesium, give colored aqueous solutions, which directly absorb the actinic rays

and permit development to be easily controlled. These solutions do not color the gelatine or paper in a persistent manner, will not stain the fingers, and will show every advantage that may be sought in rendering possible development in ordinary light.

PRINTING ON GLASS AND CHINA.

MAUDE E. SMITH HYMERS.

Most amateurs are only just awakening to the possibilities of the negative in household decoration. Pictures for the wall, Christmas cards, and even sofa pillows now have their devotees, but only occasionally does one see the photograph of a familiar nook or a favorite friend decorating the family lamp shade or rose bowl.

And yet this work is not too difficult, while its artistic effect is beyond question. Your own home may be beautified by your handiwork, and at Easter and other holidays it will provide the ever desirable "something new" in the way of gifts.

Of course for such articles as mentioned you will need to use the film negatives, as plates could not be made to conform to the rounded surface; but for flat surfaces where perfect contact can be obtained the plates will do as well.

Supposing the object chosen for decoration be a vase of opal glass, or similar material, a blue print of a scene familiar to the recipient will make a dainty and acceptable gift. The negative selected,—and it should be one of general interest as well as beauty, begin by coating the surface to be decorated with a gelatine solution laid on with a small flat brush, going over the whole surface, as you could not tell which portion is coated when dry.

The sensitizing agent is made up of 6 drams red prussiate of potash and four ounces of water; shake together and stand in the dark room until dissolved. Also mix 7 1-2 drams citrate of iron and ammonia in 5 ounces of water in another bottle, and when both are thoroughly dissolved, shake together in a third bottle equal parts

of the two solutions. With this coat the gelatined surface of the vase (where the picture is to appear) and stand in the dark room until thoroughly dry.

It is now ready to affix the negative, which may be held in place by adhesive tape, rubber bands or even sealing wax, put on wherever necessary to hold the film in firm and close contact with the glass. For most pictures it is well to use a simple cut-out or vignette over the film, this giving the finished picture a more graceful outline than would the angles of the films. Print the picture in strong sunlight for half an hour, which will be about right for the average negative. Don't attempt to examine the progress of the printing as you might disarrange the film, and there is little or no danger of getting it too deep. When the half hour is up remove the film and wash the glass for fifteen minutes in clear water, and you have a permanent image in delicate blue tints, which has a beautiful effect.

If brownish or dark tints are preferred, and this will depend much upon the foundation coloring of the article to be decorated, use the following sensitizer: 50 grains silver nitrate dissolved in one ounce of water, and applied in the same manner. Print very deep, about an hour, and tone in a simple gold bath.

Card and pin trays, fruit plates and salad bowls, plaques and other things lend themselves appropriately to this style of decoration, being almost as pretty as the hand painting. The blue prints, too, will allow of the articles being washed if carefully done in cool water.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1746. **MARTIN DOSCHER.**—This is the "record of fact" mentioned in a letter on another page, an engine and tender that so far as the photography is concerned would thoroughly satisfy its builder for any purpose that he might want it. We are glad that our correspondent agrees with us in regard to the book issued by Milton Waide, and about which some of our correspondents have taken us to task.

1747. **E. L. CHAMBERLAIN.**—"By the Evening Lamp." We cannot say anything in favor of this, although the miserable nature of the print may have to bear more than half the blame, as the negative is probably able to yield something very much better. It is a dirty grey, badly focused, with one-half of the head buried in the background; and the pose of the figure is far from satisfactory, the right arm being rendered as if much too large, looking as if stretched out it would be much too long. Lamp-light photography to be tolerable must be good, and this is far from that.

1748. **F. SOLOMON.**—"Covington, La.," an uninteresting foreground of water, a few houses in the distance, and a sky represented by white paper, with a clump of trees on the right about as black as the paper could be made, leaves little room for appreciation. Surely you can see as well as we that the negative has been very much under-exposed and that "soot and white-wash" rather than true values is the characteristic of the little print.

1749. **J. H. KELLY.**—"A Scene in the Mountains," an ass in something on two wheels with a boy and a child evidently enjoying a ride is hardly a subject for criticism, from a pictorial point of view, but as a record, a not less useful phase, it is better than most of its kind, a result of photography as a plaything.

1750. **C. R. MORRIS.**—"Winter's Mantle," from a pictorial point of view, is a missed opportunity, the left-hand half, and as an upright, might have been made into a fine picture. As it is, it belongs to the record phase, and is an excellent photograph of its kind.

1751. **R. P. WARD.**—"A Sentinel in the Desert," the sentinel being a mountain or

mound in the distance. But was the sky ever so white or the desert either for that matter? We think not, and therefore your exposure was much too short and the development too long, resulting in something more like a pencil drawing than a photograph in true values. Sufficient exposure is the foundation stone of good photography whether for the pictorial or the record phase.

1752. **GUS A. EITELMANN.**—"On the Fence." You have done much better than your models, and you would have done still better had you made it an upright rather than an oblong. The figures are on the fence, and had they known just what to do they might have been on it in more senses than one. Instead of that however, they are simply and almost stupidly sitting to be photographed with as little action as if they had been lay figures. The photography is good and the color better than we have as yet seen from a kallitype method. Figures in a picture are always risky unless properly trained, and it is very evident that those here were not.

1753. (Mrs.) **H. E. PHELPS.**—"Portrait" is a very good example of what may be called "professional work." Considerably above the average of the ordinary Provincial photographer, although it suffers much from having been printed under a badly shaped oval mask, an oval much too nearly allied to a circle. It is not nearly so bad however, as the fancy mask of the portrait sent to the competition which would spoil the best picture that was ever produced. Think of the strongest condemnatory adjective in the language and it will not be strong enough in condemnation of it. If you *will* have an oval, let it be plain; the tirlly-wirly curves are simply hideous.

1754. **J. HARMANUS FISHER.**—The unnamed print has the all too common faults of including more than is consistent with the best effect and in lacking any point or object of special interest. Instead of concentration there is division of interest; the eye wandering alternately along the river and along the road, but finding nothing of importance at the end of either. It be-

longs therefore, to the record rather than to the pictorial; and while fairly good it might easily have been better. A much too short exposure has resulted in the trees, especially the most important one, rising out of the immediate foreground, being as black as paper can be made, while a large part of the water over which it hangs is at the other end of the scale, unaltered white paper, as is also the sky. Twice the exposure it got would not have been too much, and would certainly have given truer values.

1755. GEO. E. FITCH—"The Flume," although pictorially treated can hardly be called picturesque, and yet in spite of the repetition of vertical lines on the left it is

but for the common desire and at the same time common mistake of getting too much in, might have been an equally good picture. Cut through the vertical center there are two good subjects especially the left half. The figure crossing the bridge with its surroundings, on a little larger scale and properly treated makes an excellent subject; and even as it is, that is cut as we suggest, and enlarged, it would be a tell-

ing picture. You have fairly mastered the technique of photography and should now turn your attention to the study of its art or the art of which it is capable. The other in our next.

1757. G. B. RUSH—"The Bachelor," a man evidently old enough to have known better than continue as such, is trying as awkwardly as usual to sew on a button,

an attractive picture that grows upon us. The method of treatment of such a subject is unique and thoroughly effective; in short, it is a fairly good picture, out of most unpromising material.

1756. F. P. TOLLES—"Zero" is a good example of a photographic record of a cold wintry day with snow on the ground, and

tells the tale admirably, although the placing gives to the figure a dumpy appearance. The whole on a smaller scale and as an upright instead of rectangular would have been better, and the more distant view-point would have given the hands

less enlarged. As it is, the figure so close to the end of the composition without sufficient balance at the other gives an impression of instability. We feel also that there are too many things on the table, so many as to attract the attention from the figure, which is really well worth a careful study. The expression is admirable, his whole soul being evidently concentrated on the difficulty in getting the point of the needle into the hole of the button, while the man-like resting of the wrist on the knee is true to nature.

1758. A. C. KRUEGER.—"Hoar Frost and a Winter Morning" is in nearly every respect a happy rendering of both. It

cause the subject is not altogether dependent on the snow but would have been well worth photographing at any season, and partly because it has got a very nearly sufficient exposure, a thing that few snow scenes that come to us have got. The foreground, however, is hardly of sufficient interest to occupy so much space, and we should have included less of it and more of the trees. The lack of atmosphere is also a fault, the extreme distance being as well defined as the nearest object. The dark tree on the right does, to a certain extent, separate the planes, but less definition in the distance would have been a decided improvement.

Aug. C. Krueger.

A WINTER MORNING—HOAR FROST.

wants only a little more of the essential atmosphere and a lightening of the all too dark trees to be a charming picture. It is a good subject from a well selected point of view, and taking it all in all, one of the best representations of winter that we have seen this season; and good as it is, one that a little of the work of the pencil on the tree stems would make very decidedly better. But Uncle Sam's postal messengers have played sad havoc with the mount, but the engraver, in spite of that, may manage to reproduce it.

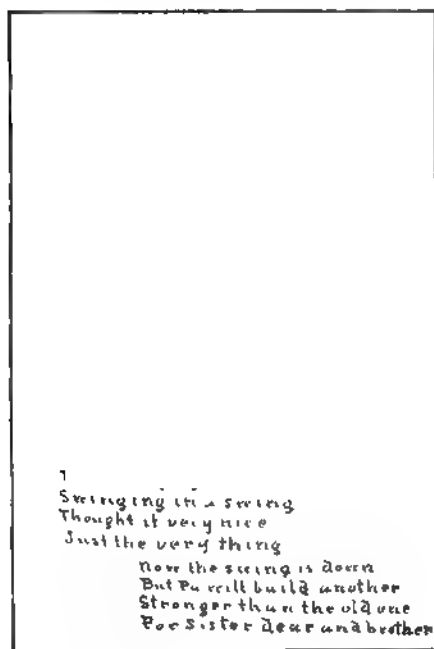
1759. C. S. KEEFE.—"The Rift in the Woods" is a snow scene considerably above the average in quality; partly be-

1760. SIDNEY S. CONGER.—"The Elms" is an excellent example of what is sometimes called straight photography, but without any claim to the pictorial, there being no one point or object of more interest than another. Nor do the elms appeal to us in any degree as showing the majesty and beauty of those ornaments of the landscape; even the nearest and largest seems hardly a tree, while the others, probably from the use of a lens of too short focus, seems little more than saplings. The photography is very much better than the subject, there being even a fairly good indication of atmosphere in the distance;

subject and arrangement are good, but the figures are as stiff as if made of wood, with not a trace of the action that there should have been in walking; and there is not a trace of the atmosphere that is essential in a good picture. As it is however, it would have found a good place in the exhibitions of thirty years ago, but you will not make truly artistic work till you learn how to expose long enough to develop without getting your skies so white, and to concentrate the attention on the objective point of the composition instead of having everything equally well defined all over the print.

but, as represented, we should not have thought it worth a plate.

1761. W. H. LUCKHAUPT.—“Homeward” is an excellent example of what is sometimes called straight photography or a record of fact, its only fault from either



of those points of view being the intolerable white sky. Toned down in the usual and well known way,—the exposure to sunlight of the print or rather the sky thereof, with the slowly passing up and down of a sheet of cardboard, would have been a very decided improvement. The

1763. W. E. CULVER.—The nameless print,—we see no connection between it and the two verses underneath, a girl writing, and with her head bandaged as if she were suffering from some cause, is probably a fairly correct portrait, but with no pictorial quality, and is much too hard to be a good photograph. A longer exposure and shorter development would have given a much better result; greater softness and better texture. Then, the verses at the bottom with no apparent connection with the figure, have a distracting effect; they

will take the eye from the figure, and keep the mind wondering what they are doing there.

1762. S. A. SMALL. — "School-House Path," is a fairly good photograph of, as arranged, an uninteresting subject, especially as you have diminished the school-house to about the size of a shirt button and placed it at the very edge of the 5x7 print. We should have made it an upright, given the school-house a prominent size and position and excluded a considerable portion of the uninteresting matter on the left. From the dark corners of the sky we presume the lens was pointed so low as to be beyond its covering power, and from the nature of the subject we hardly see the necessity for or the advantage to be derived from the employment of the color filter. But taking it all in all, the photography is much better than subject as you have arranged it.

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

Camera Club of New York.

On April 6th an exhibition of slides contributed by members to the annual competition for the silver cup presented some few years ago to the club, was held, when the judging took place. The judges were Wm. M. Murray, Alfred Stieglitz, Charles I. Berg and Eduard Steichen.

The cup is to continue to be the property of the club until an award is made to a single successful competitor after three successive annual occasions.

There were sixteen competitors on this occasion each submitting a set of six slides. Several friends of the competitors were present. The usual electric lantern was used. The main feature was the artistic quality of the slides. In all of the 16 sets the judges were unable to locate a set that was wholly artistic. In one, No. 11, Mr. M. W. Seaman's set, they found enough slides of artistic quality to give him an Honorable Mention. In another, No. 14, by Mr. Brownell, an Honorable Mention was given for excellent technique, illustrations of birds, birds feeding and birds nests, having a delicate pleasing tone or

color. Mr. Malcolm Stuart, No. 12, contributed an interesting set, of Norway and other foreign views, one a picture of a Holland landscape with cattle nicely grouped was quite similar in appearance to the noted Vandyke style of painting. In Mr. Seaman's set was an interesting picture entitled "Follow the Leader" representing a large flock of geese passing in double file up a lane. The view was made from the rear of the flock at an elevation and was technically excellent in quality.

ANNUAL MEETING, APRIL 12TH.

The annual meeting of the club occurred on Tuesday evening, April 12th, and was presided over by President C. H. Crosby. After the usual formalities of reading and approving the minutes of the previous meeting, reports from the several committees were received. The Print Committee through Mr. Ferguson, explained at length the difficulty that had been met with in securing desirable print exhibits, especially on account of the work of the Photo-Seccession League. Their work had been in demand in several cities which made it uncertain when an exhibit could be had at the

club. There was not as much general interest at the club about print exhibits as the committee could wish.

The annual members' print exhibit had been hung on the walls for the month of April and could not be considered as large as in previous years. [A comment on this exhibit appears on another page.]

The librarian reported some accessions having been made to the library during the year, ten magazines were subscribed for and six were donated to the club by the publishers. The sum of \$36.45 had been expended in binding books. The sale of duplicate books at the auction realized \$23.30. About forty-one additional books had been purchased.

The Entertainment Committee reported that there was a small deficit in the receipts of the annual dinner which was likely to be made good.

The Lantern Slide Competition Committee made a report on recent exhibit, stating that no set took the prize. Mr. Seaman's work evinced artistic qualities.

The secretary read the annual membership report which was somewhat discouraging in the showing of great loss in membership the previous year. The total number of active members April 1, 1903 was 200. On April 1, 1904 it was 157 making a net loss of 43. The net loss in non-resident membership was 8. The total paying membership for the support of the club is 225. There are in addition 20 life members who have the same privileges as active members and 17 honorary members so that the club begins the year 1904-5 with a total membership of 262 as against 311 April 1, 1903, a difference of 49. The secretary, Mr. E. Lee Ferguson, stated the loss in membership had been twice as great as the previous year. The number of new members admitted had been about the same.

For the Board of Trustees he reported that nineteen meetings of the board had been held, that the income from annual dues was only two hundred dollars less than the previous year and that the club

had lost but twelve members by reason of the advance in the dues from twenty to twenty-five dollars per year.

He stated that he had endeavored to systematize the work of the secretary and of the trustees and advised that the secretary have an assistant to attend to the matter of sending and mailing notices.

The Treasurer, Mr. H. T. Rowley presented the annual report of the financial affairs of the club, which was approved.

The surplus on hand April 1, 1903, had been largely lost through the unusual expense incurred in moving from Twenty-ninth Street to 5 West Thirty-first Street and refitting the rooms there with lockers and other conveniences for photographic work. There had also been quite a loss in the publication of *Camera Notes*. These two items involved a tax on the club's resources amounting to 2,238.06. Other expense items were rent, \$2,624; entertainment committee, \$955.92; custodian services, \$857; light, current, elevator, stationery, printing and postage, \$719.64. Receipts from annual dues, entrance fees and locker rentals were \$5,876.05, something like \$450 less than the previous year; the entertainment committee realized from lectures a gross sum of \$1,031 and a profit was realized over the expenditures for entertainment purposes.

Following the reports, the annual election occurred, 34 votes being cast.

The regular ticket nominated, was elected as follows: Frederick E. Ives, president; E. Lee Ferguson, vice-president; John B. Kerfoot, secretary; R. B. Minis, treasurer. Trustees for one year, W. E. Wilmerding, Eduard J. Steichen. Trustees for three years, Louis B. Schram, A. K. Boursault. Committee on Admission, H. B. Reid, H. T. Rowley, Ed. Heim.

Ex-president Crosby in retiring made a few remarks expressing his appreciation of the support the members had given him and stated that though the board had been hampered for lack of funds still the club had made some progress and he wished the club continual success.

Mr. Frederick E. Ives, the new president was then introduced. He remarked that for twenty-five years he had devoted himself to the study of the science of photography, that he assumed the formalities of the office not that he was particularly fond of it but that he might assist the club in learning more of the science. He hoped to stimulate a more active interest in the scientific side of photography. We must prove our work. The scientific study of science was the basis of pictorial photography and made it possible. His remarks were approved by vigorous applause.

Mr Kerfoot in assuming the office of secretary, stated that he would endeavor to do the best he could to promote the interests of the club.

Mr R. B. Minis, the newly chosen treasurer, remarked that he hoped to do the work of his office to the best of his ability.

Just as the meeting was about to adjourn Mr. Beach exhibited and explained a new form of lantern slide vise called the "Franklin" as illustrated below.

The object of the vise is to tightly hold in position for binding the slide and cover glass, so as to permit the binding strip to be readily and accurately applied. It is adapted especially for slides $3\frac{1}{4} \times 4$ in size but can be used for others. One plate is just enough smaller than the slide to form

a guide for the laying on of the binding strip, so that it will be uniformly straight around the cover glass. This plate is slidable in the length of its axis regulated by a clamping screw, Fig. 4, pressing upon a flat spring working in a concentric recess in the outer end of the shaft.

The other plate is still smaller in order to expose more surface on the back of the slide for the reception of the binding strip. The plate has four holes in which a spring pressed locking pin is pushed as the whole is revolved.

The operation at first is to place the vise in the position shown in Fig 2, then put a guide block against the bottom and insert the unbound slide. The guide block ensures the edges of the slide to be parallel and in line with edges of the metal plates. When thus aligned the clamp screw in Fig. 1 is operated to clamp the plate against the slide. The guide block is dropped and the work of binding begun as in Fig. 3. The spring pin, Fig. 3, is drawn out by one hand which allows the vise to be rotated to the next position where it is locked and the binding is applied to that end, Fig. 4. The slide is then rotated and bound for the next two edges successively, when the work is completed. The clamping screw is loosened and the complete bound slide is removed. The inner face of the clamping plates are lined with a soft material to prevent any abrasion or scratching of the glass. It is supported upon a substantial metal base and is quite strong and compact. It makes a very complete arrangement for mounting slides.

After explaining the device Mr. Beach presented it to the club for the use of members interested in slide making. A vote of thanks was accorded.

Upon invitation of Mr. Beach, Mr. H. W. Hales was introduced and exhibited and explained a new hand focal plane shutter camera which possessed special features in being quite light, compact, and in having a new plan of viewing the image just prior to the time of exposure. After the exhibit the meeting adjourned.

Attention was called to the members' annual print exhibition hung on the walls.

SPECIAL MEETING, APRIL 14TH.

On Thursday evening, April 14th, Mr. Frank M. Steadman gave an informal talk "On a plan for the simplification of the method of making correct exposures" as stated on the card. The remarks were quite interesting since some special facts regarding the actinic qualities of light were defined and brought out.

He maintained that photographic action was based on three things: actinic intensity of the rays of light, or its intrinsic intensity, chemical activity of the plate, and the element of time.

It was necessary to devise some standard empirical unit or exposure factor to use in comparison with instruments now in use, which should become a definite basis to work from. The unit he had adopted was solio paper, since it could be obtained everywhere and was universally conceded to be quite uniform in sensitiveness to the actinic rays of light.

The time factor he had adopted was 32 seconds which was equal to one actino of intensity.

That is to say the tint solio paper would assume in 32 seconds' exposure to diffused daylight would be the standard tint or represent one actino of intensity.

The eye was not made to judge actinism, it had great range as to sensitiveness to light.

It was not till the science of photography was discovered that actinic intensity came to be known as the energizing force. Once understanding it the process of obtaining certain results on the sensitive film becomes easy.

The law of actinism has not yet been perfected, only phases of it are known. There is no certain way to render nature actinically, only by actual experimenting in photography can facts be learned. It is his aim to have photography taught in schools as a branch of optics, for it is the actinic qualities of light that must be understood.

The average dry plate has the latitude

or variation of one to forty, that is, it can be exposed forty times normal and be made to yield satisfactory results; this enables the user then with the solio actinic standard to vary slightly the exposure indicated with reasonable certainty of results.

To make use of the system in practice he advises carrying a small book containing pieces of unexposed strips or sheets of solio paper, in the cover of the book have a small hole about a quarter of an inch in diameter. Place a part of the paper under the hole and expose it to the light of the sky or towards an open window. Watch the paper, keeping time with a watch or by counting until it just begins to tint by the light. Note the time, say it is four seconds. A guide is then given as to the actinic intensity of the light at that place and that time of day. A measure is made in absolute seconds.

The next step is to select a diaphragm to suit the time of ascertained actinic intensity. If, for example, it has been found by one experiment that a lens at full aperture either at f-4 or f-8 on four seconds solio time unit gives a fully timed negative in one-quarter of a second on a uniform grade of sensitized film, the correct time for an aperture reduced to f-16 would be one second, f-32 two seconds, f-64 three seconds, f-128 four seconds and so on. If it took eight seconds to secure the solio tint the correct time would be double those just stated. Mr. Steadman prefers the universal system of stops over the f system though they both practically amount to the same thing. He exhibited a specially constructed combined diaphragm and shutter arrangements fixed on his lens so devised that he could automatically adjust the size of the diaphragm to the speed of the shutter used based on the actinic intensity of the light as found by the solio unit method.

He contended that it reduced exposure to an accurate certainty and had proven it by actual experiments over a long period of time.

He believed, if the various photographic clubs and organizations throughout the country would unite in an effort to establish a unit system of actinic intensity, the numerous plate, shutter and lens manufacturers would co-operate to make it practical.

One member suggested that the plate manufacturers could include with each box of plates one or two small sheets of solio paper arranged for testing the actinic intensity of light, with a schedule of time exposures for that particular grade of plate.

Mr. Steadman practices the following method of counting seconds which is found to be quite accurate. For one second of time:

"Naught, one-half and one" is said.

For two seconds the same is repeated.

"Naught, one-half and one" is said.

For half a second:

"Naught, one-half" is said as rapidly as it is easy to say it.

For one-quarter of a second say "quarter."

At the conclusion of the talk President Ives pointed out the fact that the solio time advised by Mr. Steadman was not adapted to color photography for the reason that no amount of exposure to the red and green rays would have any effect upon the solio paper. Mr. Steadman thought a relative value could be established compared with the time it was required to tint the solio paper with the ultra violet blue rays. Another point of relative value not alluded to by Mr. Steadman is the fact that the photographic light acting through the lens upon the plate is the reflected actinic light from the objects before the camera, while the tinting of the solio unit of actinic measurement is based upon the action of the light directly upon the paper, which in a degree is more powerful than the reflected light can be. This difference is made up in the latitude of the sensitive plate for longer exposure and for

allowance in the size of diaphragm in the lens to correspond with the brilliancy or dullness of the object to be photographed as regards its reflecting power of actinic illumination.

The advantage of the system is that any unskilled person can at any given time or place, with the solio unit, determine quickly the approximate correct exposure.

Akron Camera Club.

The first salon of this flourishing club was held in the assembly rooms of the club's quarters during the first week of April. Thirty-four exhibitors were represented and 113 frames were accepted and hung. The judges did satisfactory work and the accepted pictures formed a collection as nearly representative of American photographic art as any of the larger salons have shown. The salon committee deserve great credit for their efforts to make this exhibition a notable success.

The Troy Camera Club.

From W. B. Myers we hear that the Troy Camera Club was established about a month ago with a membership of 21, and that already they number 108. They have secured suitable premises at 250 River street and are fitting up a dark-room and sky-light for portraiture. To find the necessary funds Mrs. H. B. Waters kindly delivered an illustrated lecture on April 7th, the subject being the "Depiction of the life of the thousands of convicts in the Prisons of New York State." Arrangements are made for several demonstrations of the practical working of velox and other papers, and the members are already planning for a series of outings during the coming season. They have begun well and we wish them a large measure of success. The officers are: President, J. Collison; vice-president, C. Crawford; secretary, A. McNaughton; and treasurer, Dr. Rouse.

Wyoming Valley Camera Club.

The third annual exhibition of this club was held in the Y. M. C. A. Building, Wilkesbarre, Pa., on March 24-26, 1904. Two hundred and seventy-five pictures were displayed, besides a loan exhibit sent by Henry Troth of Philadelphia—a remarkable showing for so young a club. The jury of awards consisted of Messrs. Henry Troth, John G. Bullock, and S. Stockton Hornor, all of Philadelphia. The blue ribbon in portrait class was awarded to R. S. Kaufman for a portrait study. He also received blue ribbon and honorable mention in landscape class. Mrs. J. C. Sheridan received blue ribbon in genre and animal classes, and honorable mention in landscape class. R. H. Tubbs, blue ribbon in botanical class. The exhibition had a large attendance and proved a good advertisement for the club.

Manhattan Camera Club.

Mr. F. M. Steadman gave a demonstration of his "Solio" method of measuring light and getting the correct exposure before the Metropolitan Camera Club on Monday, April 25. Mr. Steadman for the first time, and taking all chances of failure, demonstrated his method under the Cooper-Hewitt electric light. There has been some doubt that the "Solio" method was applicable to conditions of light in which a particular color predominated, and this, owing to the fact that the "Solio" and the photographic emulsion are not sensitive in like degrees to certain colors. Concerning the Cooper-Hewitt light, however, in which the red is said not to exist, the harmony between the "Solio" and the emulsion was perfect.

Five portraits were made, including bust to full figure, and the negatives, which were made on film, were developed in the kodak developing machine with rodinal and all proved to be perfectly timed and developed. One of the negatives the demonstrator covered with a piece of thin celluloid and a velox print was made which

showed perfect contrast and gradation.

Following are the attractions for the month:

Thursday, May 5, Selection and Use of Lenses, by Mr. L. V. R. Holst.

Monday, May 9, Negative Making, by Mr. Bell.

Friday, May 13, Lantern Slide Trial (for members only).

Wednesday, May 18, Lecture on Lenses, by Mr. Holmes.

Friday, May 20, Rotograph Demonstration (samples distributed).

Wednesday, May 25, Portraiture with the Studio Light, by Mr. Hord.

Friday, May 27, Monthly Lantern Slide exhibition. A representative collection of slides of the American Lantern Slide Interchange has been kindly loaned by Mr. J. P. Chalmers. Visitors welcomed.

Third Intercollegiate Exhibit.

Harvard won the Third Intercollegiate Photographic Exhibition with University of Pennsylvania, which was held in Cambridge, April 27-May 7 and in Philadelphia May 11-21. The judging took place at the home of Miss Mary Devens, Fellow of the Photo Secession, in Cambridge, on April 17. The other judges were Alvin Langdon Coburn, of New York, another Fellow, and Mr. H. A. Hess, of Boston, an associate of the Secession.

Harvard won the contest for the most artistic exhibit as a whole. The individual prizes were awarded as follows:

First Prize: Willard C. Greene, H., "Early Morning."

Second Prize: M. T. Fleisher, U. of P., "Street Scene."

H. M., F. L. Richardson, H., "In the Ice Floe."

H. M., Geo. W. Outerbridge, H., "Fie-sole."

H. M., H. P. Williams, H., "On Lake Geneva."

H. M., Malcolm Dean Miller, H., "At the Wharf."

H. M., L. B. Register, U. of P., "Lotus."

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol Tloga Centre, N. Y.

Some remarkable enlargements are to be seen in many of the photographic stores throughout the country. They are issued by Taylor, Taylor & Hobson to show the possibilities of a Cooke anastigmat, and though measuring something like 16x20, they are direct from 5x7 negatives. One of them shows three race horses going at full speed within only a few feet of the camera and at right angles to the lens axis. A small half-tone of this subject is shown in our advertising pages this month. The pictures are by J. C. Hemment of New York and are worth examining by those interested in high-speed photography.

* * *

"WITH THE CAMERA," the monthly circular from The Illinois College of Photography, is always welcome, telling as it does of much of the sayings and doings of the students, and of the continued progress of Institution. From this we learn of the addition of another teacher to the retouching department. Professor F. E. Strickland, of the return of several students for review work and of some to learn the art of photo-engraving; and of many reports of success from former students now running studios of their own. The College Camera Club continues to prosper and have added another background to their stock and a new posing chair, without depleting their treasury. One very encouraging feature is the fact that although the engraving department has been in existence for only a short time the editor of one of the great Sunday papers recently applied to the College for a dozen of its graduates for his engraving department.

Nor do they believe in all work and no play, as is shown by the fact that "The ladies of the I. C. P. recently gave a 'Leap year reception' at the College, in which everything was conducted in leap-year style to the delight of all present."

* * *

IN calling the attention of our readers to the advertisement of the Ray Manufacturing Co., we wish to say that there is no fake in their offer. We have received a sealed package which is now in our safe, and which we are to ship to the winner. The Ray Mfg. Co. impose no restrictions other than that a two-cent stamp is to be sent with the guess (any number from 1

to 500). For the stamp they will send one of their catalogues to each contestant.

* * *

THE CENTURY CAMERA Co. issues the most elaborate catalogue this year, "another evidence of Century quality." Sumptuously illustrated, beautifully printed, and tersely written, it should convince the most skeptical that the Century camera is IT. All the last year's models are listed, with minor improvements and some new models added. A noteworthy improvement this year is the Century revolving back which permits the picture being instantly changed from vertical to horizontal without removing the back from the camera—a decided improvement on the push button at each side. A mirror panel for viewing the image right side up is an auxiliary which may be ordered with 4x5 and 5x7 Centurys. Rochester leads the world in camera manufacture and the Century Camera Co. sets the pace.

* * *

EDINOL-HYDRO DEVELOPER in concentrated solution is now obtainable from all dealers. The Farbenfabriken of Elberfeld Co. in thus anticipating the wants of the amateur have taken a wise step. Many amateurs who only make occasional prints do not care to go to the trouble and expense of mixing their own solutions and yet desire to try the latest formulae. These will find the Edinol-Hydro developer both economical and handy. It is a clean working developer for either plates or papers. One part to seven parts water is the proportion for plates and double the quantity of water for papers.

* * *

THE PREMIO CATALOGUE for 1904 is a sensible and straight-forward statement of the well-known products of the Rochester Optical and Camera Company. Although couched in modest language, the Premo quality is evident in the fine line of cameras shown. No change has been made in the regular models except a new device for holding the reversing back in position which is much quicker and easier in operation than the spring at each side. Other improvements are an automatic clamp for locking the front board to the bed, an au-

tomatic bridge which permits the front sliding easily the entire length of the bed and a stop clamp for quickly setting the front at universal focus. Two new models at popular prices are a Premo box film camera and a Premo folding film camera. These two, especially the former, should be popular with visitors at the fair. With a few dozen film packs in the pocket, a large number of pictures can be made in rapid succession; as the shutter is always set and the lens always in focus. The loading and unloading is also quickly and easily accomplished.

* * *

THE BISSELL COLLEGE OF PHOTO-ENGRAVING.—We have several times written appreciative notices of the addition to the Illinois College of Photography of a plant and staff of teachers of photo-engraving; but from a pamphlet just received we find that the scheme is much more ambitious than we had supposed. The pamphlet is practically a prospectus of the "Bissell College of Photo-Engraving" which includes practically both the theory and practice of every one of the various methods of photographic reproduction in printer's ink; line, photolithography, half-tone, photogravure, collotype, swelled gelatine, etc., etc., with the preparation of both positives and negatives therefore.

The tuition in the Bissell College of Photo-Engraving is equally available to the student who intends to make engraving his life work and to the ordinary photographer who would find it a profitable addition to the ordinary branches of photography. From what we know of the thorough nature of the teaching in the College, graduates of the former class will soon be sought after by employers, as the man who is as well acquainted with the theory as with the practice will certainly do better work than he who, taught only by practice in a busy workshop, knows the *how* and probably only one method thereof, but knows nothing of the *why*.

Those seriously considering the adoption of photography in any or all of its phases as a profession should send for a copy of the book in which they will find almost everything that they need to know, including transportation to the College from almost everywhere, even St. Petersburg in Russia.

* * *

THE PHOTO-MINIATURE, No. 59 deals with "Combination Printing," and when we say that it is written by the well-known A. Horsley Hinton the editor of *The*

Amateur Photographer and one of the most successful of British combination printers, and whose work is almost as well known on this as on the other side, we have said enough to secure for it a favorable reception by every photographer who aims at salonomic quality.

The author tells both by precept and example, and so plainly that he who runs may read, how some of his own most successful pictures were produced from two, three, or more negatives, and all so simply done that it seems almost easier to succeed than to fail. He gives two methods, his own "Drawing-board" and one with the ordinary printing frame, by either of which, or perhaps both combined, there seems hardly a limit to the combinations that may be made, the removal of objectional features or the addition of something that may be desired; even the reduction of parts that may be too large or the enlargement of such as may be too small.

Speaking of combination printing, the author says, "A picture made after this manner is first a creation of the imagination, because before we deliberately introduce into one scene some part of another we shall have imagined the thing done, and have seen in thought the thing completed." Now if this be true, and who will doubt it? combination printing must be one of the greatest aids to picture making, and we have no hesitation in saying that Photo-Miniature No. 59, as a practical instructor in that branch of the photographic art is far ahead of anything of the kind that we have seen.

* * *

MORE LIGHT IN NEGATIVE MAKING.—This is the "5th book," the last of the series on this subject by Professor Cook, of the Illinois College of Photography, and consists mainly of brief paragraphs on the "mixing and compounding of chemicals" used in photography, the most important part being a sheet or chart giving synonyms, of the symbols, and some of the properties of those chemicals. So far as it goes it is fairly correct, except for one amusing blunder. Dealing with the hydrometer, he says: "for photographic purposes such an instrument is termed an *actinometer*." The italics are ours, and we might have thought it was slip but for the fact that it occurs three times on the same page.

It is likely that he was thinking of the old argentometer, almost universally employed in wet collodion days, as the author must know that an actinometer is an instrument for measuring the actinism of light.

Just one word more. Why select such a type for the book? It is hard enough to study when the print is as easy as ordinary type can make it, and surely unwise to add the trouble incident to that which is "fancy" or unusual.

* * *

RADIO-ACTIVE ORE.—Mr. S. B. Weld, of Parmelee & Weld, analytical chemists and assayers, Denver; kindly sends us a sample of the radio-active ore of the "pitchblend" variety said to be sufficiently active to make silhouettes in the usual way on photographic plates, with an exposure of from a week to ten days.

Should it turn out as we have reason to believe, with an inexhaustible quantity of the raw material, it will be surprising if American ingenuity does not find methods of producing radium at a more come-at-able price.

* * *

WYNNE'S SHUTTER SPEED TESTER.—Just as we are about to go to press we have received one of the beautiful, simple, and thoroughly efficient Speed Testers recently introduced by the Wynne's Infallible Meter Company and while we cannot, in time for this number, put it to the test of practical work, we can say that the arrangement is so perfect and so simple that any one who can expose and develop a plate can in the time that it takes to do so obtain an accurate chart of each of the various speeds of his shutter.

The speed tester consists of a flat metallic rod about thirteen inches long having at its lower end a bob of lead and at its upper a convex mirror of highly polished metal. This swings in seconds on fine steel points on a stand with indentations in which they rest in such a way as to reduce friction to a minimum; something akin to the well-known metronome without its case.

Behind the swinging pendulum is placed a chart with white lines on a black ground, each representing the 100th of a second, and it is only necessary to start the pendulum a little beyond the outmost line and snap the shutter while it swings.

The developed and fixed negative will show the lines of the chart, dark on a light ground, and crossing them the curved line of the mirror, the number crossed indicating the fraction of a second that the shutter was open. Thus, if it has moved a distance equal to that between one line and the next, the speed is the one-one hundredth of a second; if across five lines one-twentieth; if across 20 lines one-fifth; if across 60 lines three-fifths of a second, and

so on; the lines being mathematically arranged in their respective distances to allow for the differing rates at which the pendulum moves.

In our next, should we get home in time, we hope to give the results of the testing of some of the shutters in most general use; and in the meantime may say that the "Infallible Speed Tester" fills a long felt want.

* * *

INCREASE OF SPEED OF R. O. C. PLATES.—We are informed on reliable authority that a material gain in speed and quality marks the output of the R. O. C. Dry Plate Co., as compared with last year. Sensitometer tests of a recent batch of plates yielded f-90 as the Wynne speed number as against f-64 of the same make of plate a year ago. It is therefore evident that one-half the length of exposure formerly required will now suffice. The improvement in quality is no less marked and the R. O. C. plate takes its place in the front rank, all that the present product has in common with that of a year ago being simply the name.

* * *

THE Elysian Camera Club, Hoboken, N. J., began a Competition January 1st, 1903, offering a cup to the member exhibiting the finest marine subject during the year, each member to be permitted to exhibit but one view.

The cup has been awarded to Mr. William Peterson, who made the winning negative with a Bausch & Lomb Plagiotam Lens.

The Bausch & Lomb Optical Company, Rochester, N. Y., would be glad to have the addresses of all photographers who win prizes with negatives made with their lenses, and to arrange with them for copies of the prize winning prints.

* * *

ONE of the exhibits at St. Louis this summer will be a collection of 300 fine photographs, the work of Sir John Benjamin Stone, M.P., of The Grange, Erdington, a town near Birmingham. The photographs are careful studies, giving a large and accurate knowledge of the history, politics, antiquities, social life, customs and traditions of Great Britain. Sir John's collection is considered the most complete and varied ever made by any photographer not a professional; and the three hundred chosen for exhibition in the Liberal Arts Building at St. Louis will comprise in themselves one-third of the British official exhibit in photography. Sir John Benjamin Stone's work, especially

that portion Americans are to see, will be fully described in the *May Century* by George F. Parker, formerly United States Consul in Birmingham. His "History by Camera" will be illustrated with examples from the exhibit.

* * *

BAUSCH & LOMB OPTICAL COMPANY of Rochester, N. Y., have just issued a new lens catalogue which contains some startling innovations in portrait lenses. There are some practical articles in the book also which will repay the reading, and every one who is contemplating the purchase of a new lens should secure a copy.

* * *

AUTOMATIC ELECTRIC PHOTO PRINTER.—One of the most interesting exhibits at the recent Iowa Photographic Convention was the Kilborn Automatic Electric Photo Printer. It consists of a box in which electric light bulbs are placed below the negative and which are turned on and off automatically as the paper is put in contact. It prints from cut sheets on rolls and is capable of turning out a surprising number of uniform prints in short time. Full description of the apparatus will be sent by the Kilborn Photo Paper Co., Cedar Rapids, Ia.

* * *

VOIGHTLAENDER & SON OPTICAL CO. have issued a new catalogue treating especially of their new extra rapid anastigmatic lens. Heliar, a copy of which will be sent for the asking.

* * *

The good qualities of the Hammer Dry Plate have never been more in evidence than they are at the present time. En-

larged facilities for their manufacture and the most perfect, modern machinery, coupled with a rigid inspection of every batch of plates manufactured, has resulted in a product of uniformly good quality throughout. Hammer Plates are made in such variety of speeds and working quality as to fit them to every requirement of modern photography, either in the field or studio.

The announcements of this firm in our advertising pages are full of interest from month to month and are serving to introduce the Hammer Plates to many who have not known them before. This introduction is in most cases all that is necessary; the plates do the rest and the demands upon the capacity of the factories are steadily increasing.

* * *

THE *May Century* will have two articles on the daguerreotype: "The Charming Daguerreotype" by Pauline King, and "The Lost Art of the Daguerreotype," by Abraham Bogardus, the veteran daguerreotypist. For those who believe with Pauline King that, short of an artist's fine handwork, there has never been any means of reproducing the human face which has the charm of the daguerreotype, the story of the invention and development of Daguerre's process will have much interest. Reproductions from old daguerreotype likenesses of Joseph H. Choate, Edward Noyes Westcott, Louis Jacques Mande Daguerre himself, Edmund Clarence Stedman, Mary Mapes Dodge, and other well-known persons add to the value of the article, which may well stimulate some enterprising photographer to revive this charming process.

A NEW CAMERA—HALES FOCAL PLANE.

We illustrate herewith a new style of focal plane camera which possesses a number of excellent features. There is no ground glass mirror, no finder, yet the picture is seen full size, right side up, until the moment of exposure. Focusing is done on a white, opaque curtain which occupies the plane of the sensitive plate and forms part of the focal plane curtain shutter. There being no distortion of the image as in the case of mirror reflections or "grain" as in ground glass focusing, to contend with, it is obvious that the image can be focused to microscopical sharpness

and seen just as the finished picture will appear.

Fig. 1 shows the camera extended, the folding front and focusing arrangement being similar to other folding box cameras. All the working parts are in easy reach and adapted to the quickest manipulation. Lowering the front, the lens board is racked out and clamped at general focus, the plate holder slide withdrawn and the image viewed on the opaque curtain by looking down through the hooded eyepiece shown at the top. This hood is automatically extended in position as the top is opened. When the final focus is ob-

ble of speeds from 1-10 second up to the highest attainable by any camera, and the width of the slit is also adjustable.

Fig. 2 shows the position of the camera at the moment of making an exposure.

Fig. 3 shows how it may be successfully operated in a crowd or procession, the camera being held overhead, yet the full-size image giving a certainty of results unattainable with any other camera under such conditions.

The Hales Camera Co., (Incorporated) of Ridgewood, N. J., are the owners of the patents and have their own factory at Ridgewood where the cameras are now being manufactured. Mr. H. W. Hales, the president of the company has brought out several other photographic inventions and the other members of the company are experts in their line. Their aim is to manufacture a high grade, serviceable article at the lowest possible price and no doubt they will receive their merited share of support. The Hales camera is made in four sizes, from 4x5 to 8x10.

Fig. 1.

tained, pressure on the release knob at the bottom right hand simultaneously carries the plate forward into the focal plane and releases the curtain, completing the exposure. The focal plane shutter is capa-

Fig. 2.

Fig. 3.

MONTHLY PRIZE COMPETITION.

The most artistic and otherwise perfect genre picture received during the month was "The Home Over There," by Mrs. J. C. Sheridan, Meshoppen, Pa., and reproduced on another page. It is awarded first prize of \$3. From what we have been privileged to see of Mrs. Sheridan's work, her technique is beyond reproach and it only needs closer attention to the laws of perspective and composition to place it in the foremost rank.

The second prize of \$2 is awarded to W. C. Webster, Jacquins, N. Y., for his

"Study," a charming picture in sepia of a child with a story book. Since Mr. Webster first began to send prints to "Our Portfolio" he has improved so rapidly that it gives us much gratification and encouragement. His more recent pictures show that he has mastered the bugbear of underexposure and the softness and perfect rendering of the print before us is in marked contrast to the wiry sharpness and incorrect values of his former f-64 attempts.

Next month's awards will be given for the most artistic landscape with figures.

LETTERS TO THE EDITORS.

EDS. AMERICAN AMATEUR PHOTOGRAPHER:

Dear Sirs: I am just in receipt of your valuable magazine, and notice that you have again published the formula for silvering mirrors for which I thank you very much.

Unfortunately I am situated on the plains of Texas where scenery is scarce but I am sending you under a separate cover a record of fact which I wish you would criticise in your next issue. I send this because it was made according to Milton Waide ideas of one man photography, and I see in your columns that Mr. W. H. Blacar denounces this method but I will say that since using this method my prints are better by 50 per cent.

There is no question but that gas light papers are coming to the front.

I notice all the magazines are praising and harping on carbon printing, and the first claim they make is that it is cheap, but I notice that according to catalogs in my possession that it is about the most expensive out, besides all the trouble and work as regards transfers, hot water, temporary and final supports and a whole lot more.

On the other hand when you have velox or other gaslight paper and the proper developer you can do more work by twice and just as good.

Thanking you for past favors and wishing you success,

I am, yours very truly,

MARTIN DOSCHER.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

R. T. HILL.—The formula to which you refer having been given in confidence, we are not at liberty to communicate it to any one. The cement known as marine glue, and which may be got from most opticians, is both water and acid proof and should answer your purpose. Place the glue in thin shavings on the edges of the

vessel made hot enough to melt it, and bind them together till the cement is cool and hard.

ELSON CRAWFORD.—The only instructions necessary for the sending of prints to "Our Portfolio" are that you should do the best you can, fix a coupon to the print and send it either mounted or not; the for-

mer if you desire our opinion as to the mounting as well as of the art and the technique.

T. C. WALKER.—The "Pockmarking" is evidently the result of insufficient squeezing of the tissue in making the second transfer, made more difficult, of course, by the roughness of the paper; and can only be prevented by making sure that the tissue is brought into perfect contact with the permanent support. In writing instructions for carbon or indeed any other printing method it is hardly possible to mention all the probable causes of failure, but there are a few noted in *Weston's Carbon Printing*, and many more in *Carbon Printing by Max Boelte*. Much useful information may also be found in the book issued by the Autotype Company, *Carbon Printing Made Easy*, this latter manual, 50 cents, postpaid by our publishers.

J. M. ROBERTS.—Supposing the ferrotype plate to be quite clean, the most likely cause of the prints sticking is a partial decomposition of the gelatine from a too prolonged washing. Half an hour with six or eight changes of water will generally be sufficient; but if you *will* wash for six or eight hours, then let the prints get thoroughly dry and just before squeezing on to the plate place them in water for a few minutes. Do you use a hardener—alum or formalin?

H. SANDERSON.—We have not used printing out paper for a long time but if we should we certainly should employ the toning and fixing bath you allude to and which we have so often recommended. As you must, however, employ separate baths we can recommend the following as suitable for almost all kinds of paper.

Sodium bicarbonate .	20 grains.
Formaline (40%)....	40 minims.
Gold chloride	2 grains.
Water	20 ounces.

As, however, its keeping qualities are of the shortest it may be made in two solutions; the soda and formaline in ten

ounces of the water and the gold in the other ten, and sufficient for the batch of prints mixed in equal quantities just before using.

A. L. WILLIAMS.—A good gelatine mountant may be made as follows: Cover four ounces of any good gelatine with water and let it soak till quite soft. Squeeze out as much of the water as possible by hand and melt over a water bath; and then pour in a thin stream with constant stirring, six ounces of warm alcohol. While still warm add half an ounce of glycerine and pour into a wide mouth bottle and cork. Before use it must be liquified by being placed in a vessel of warm water.

SARA W. TREGO.—The only condition on which prints may be sent to "Our Portfolio" for criticism is that the sender shall be a reader of the magazine, and that each print shall be accompanied by the coupon to be found in the advertising pages for that purpose. Readers desiring private criticism and advice may send not more than five prints accompanied by a fee of a dollar, and with stamps for the return of the prints if so desired.

T. C. WALKER.—Your letter reached us while we were and still are too far from home to look up the matters to which you refer, but they shall be attended to in our next. We think, however, that the second query, that of indefinite keeping after thorough washing to remove every trace of the unaltered bichromate, applies only to the ozotype modification of carbon printing.

GEO H. STRATTON.—Abuse is not argument and that you can see nothing but "slubberdy slab" whatever that may be, in the pictures referred to may not be their lack of beauty and pictorial quality as much as your inability to appreciate it. The fact that those pictures have been admired and admitted to Salon honors in other countries as well as in our own should make you more cautious. We have often said that we see in pictures only what we bring to them.

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Edited by DR. JOHN NICOL and F. C. BEACH.

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THE CHOICE OF COLOR SCREENS.

The purpose of a color screen or filter is to compensate for the want of agreement between the sensitiveness of the plate and the sensitiveness of the eye with regard to color. It follows, therefore, that every different kind of plate should have its own screen and that the screen should *always* be used with the plate, that is, of course, when the correct interpretation of color is desired. The idea of adjusting the screen to the light is incorrect, unless it is desired when using one kind of light to produce the effect of another kind; as, for example, when using gaslight to produce a daylight effect, or when photographing a yellow sunset to render it as if it were illuminated by a mid-day sun.

But, practically speaking, all plates suffer to so great a degree from excessive blue sensitiveness, that there

is no advantage in troubling much about the relative characters of the plate and the screen in the early stages of correction. A good yellow screen that necessitates a double or fourfold exposure may be safely used with any plate, and by its use with orthochromatic plates matters are so much improved that many rest satisfied, showing either that they do not know what a correct rendering is, or that they do not care to get it. It is not surprising, after we have become accustomed to the gross errors of ordinary photography with regard to color, that a marked improvement should be accepted by many as perfection. To one long imprisoned in a dungeon a feeble light may appear like the light of day, but the impression of the prisoner does not alter the character of the light.

The feeblest screen that can be used

is yellow, because by the absorption of a part of the blue from white light the red and green equivalent to the blue that is absorbed are transmitted, and these together form yellow. (The simple yellow constituent of white light is so small that it is hardly worth consideration, but so far as it exists it comes between the red and green, and is included with them.) A good yellow screen is one that reduces the blue only, a clear bright yellow. Any tendency towards brown or amber is disadvantageous, because these colors absorb a part of the very light to which the plate is too little sensitive. But it is difficult to get colored glass of a pure yellow color, so that one generally has to be content with the one that shows the least inclination towards brown. By the use of dyed films it is possible to get very pure yellows, but with these it is also possible to easily overstep the mark and remove the blue so completely that it produces no effect upon the plate. Such screens have sometimes been stated to give very good results with colored objects, and doubtless it is better to use only green light (with ordinary isochromatic plates the effect of the red is negligible) than only blue (as when no screen is used), because the eye is more sensitive to green than to blue, but in excluding the blue altogether, an error of the opposite kind to the usual is needlessly introduced. It is well to regard with suspicion any bright yellow screen that requires the exposure to be increased more than fourfold, until it has been tested, unless it has been

critically prepared as the well-known "Gilvus" screens are. But the mere fact that a yellow screen prepared by dyeing a film does not require more than a fourfold exposure, is no proof of its suitability. Many yellow dyes allow, ultra-violet light to pass, and they may in this way compensate, so far as length of exposure is concerned, for the undue absorption of the blue. In short, unless one thoroughly understands the matter, and can critically test the resulting screen, it is better to avoid the use of dyes altogether. Yellow glass does not offer the same opportunities for error.

Green screens have occasionally

been recommended. Some years ago I had a green and a yellow screen sent to me to use with certain plates, the green screen particularly for landscapes, etc., as requiring a less prolonged exposure than the other. As a matter of fact, the green required a longer exposure than the yellow. The difference between yellow glass and green glass is that while the former absorbs the blue, the latter absorbs

the green. This, of course, means a waste of light.

If more correction is wanted than a yellow screen gives, then the absorption of the blue should be increased and a part of the green also absorbed, so as to emphasize the red. As this effort is increased, the yellow passes to an orange color, which gradually becomes redder. Here haphazard screens can hardly possibly

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SHOVELING SNOW.

C. S. Bourgeois.

the blue and the red. When we get plates that are too sensitive to red as well as to blue, then green screens may be useful, but not till then. Moreover, green glass has the particular disadvantage that it is very difficult to get it of a bright color. It generally absorbs the red, green, and blue, but the red and blue more than

be correct, and they may be worse than useless. In this, one approaches the refinement of color correction, and it must be emphatically distinguished from the cutting down of three-fourths of the blue, which may be safely done for any plate by almost any yellow glass of a suitable depth of tint.

The testing and comparison of color screens can be done in a rough way by anyone, but critically only by those who thoroughly understand such matters and have had experience of them.

There is not a greater mistake than the common idea that anyone can use instruments of precision, except perhaps that anyone can make them.

Anyone can *roughly* test a color screen or compare one with another. There are colored charts published that are sometimes used. Some of these are printed in three colors by a well-known process. Although they show a vast variety of tints by superposition, etc., obviously as there are only three colors present, the test extends only to those three colors. There are no three colors of which it can be said that if they can be rendered correctly all colors can be truly represented. But if a pure red (that is, unmixed with green or blue), a pure green (that is, unmixed with red or blue), and a pure blue (unmixed with green or red) can be photographed by means of a screen and

plate, so that the print given by the negative shows the three colors with a lightness proportioned to the apparent brightness of the colors when they are viewed by the same light that they were photographed by, such a screen and plate would not be likely to show much error in the photography of ordinary colored objects. The alternative method of testing screens is by the use of an Abney color sensitizer. Colored glass and superposition are used instead of a colored chart and a camera exposure. The colored glasses are backed with suitable material, so that the light from the desired source that passes through each color is of equal brilliancy to the eye, then obviously a perfectly adjusted screen and plate would be equally affected through all the glasses by the same light. I do not think that it is possible for anyone to make such an instrument that shall approach correctness without the use of some apparatus for measuring the transparencies of the various glasses. But rough comparative tests may be made by this method, as by the use of a colored chart.

THE PHOTOGRAPHY OF COLORED OBJECTS AND THE CHOICE OF COLOR SCREENS.

BY CHAPMAN JONES.

Orthochromatic photography being included in the "Trinity of Technique" to which the attention of our readers is being directed, we gladly reproduce the following from *The Amateur Photographer*, the more especially as it is written by one generally

regarded as an authority on the subject.

This subject is too often dealt with in a restricted manner, with the consequence that some to whom the art is important get into simple methods of work that are the result of an im-

perfect view of the principles involved, rather than the embodiment of the essential conditions arrived at by a process of elimination from an inclusive survey of related facts. The details of the process adopted may be the same, but the little differences that arise in its various applications are either ignored or dealt with in a mechanical manner by the narrow-

and to large subjects such as landscapes, but with restrictions that are generally obvious.

The special matter that demands attention in such work is the securing of a true representation of the light and shade and depth of tint irrespective of color. An equally light part should be caused to give exactly the same effect whatever its color,

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A TILLER OF THE SOIL.

W. F. Provo.

minded workman, instead of being met, as they should be, in an intelligent way, as by one who is master of his work.

It is more instructive to consider indoor subjects artificially illuminated, because in these cases there is the maximum of control over every circumstance. The same principles, of course, apply to work out of doors,

whether red, yellow, blue, or grey. In some cases this may, perhaps, need a little modification in order to prevent confusion between parts that happen to be of the same depth of tint but of very different colors, but such special circumstances must be regarded as exceptional and dealt with as they arise, the fundamental principle being as above stated. He

(Pinhole)

CORNFIELD.

F. C. Baker.

who is master of his methods will find no special difficulty in meeting such special cases.

There is no plate that will of itself render the various colors of objects indiscriminately. Indeed, from one point of view such a plate is a theoretical impossibility, because color is not an inherent property of the object, but depends upon the light by which it is illuminated. But most of the plates, if not all, are very far indeed removed from the desired condition, and although it is true that they can be used without color screens, and that under these circumstances color sensitized plates will, as a rule, give rather better results than plates not specially sensitized, the improvement so obtained is so slight that it may be generally disregarded,

as it needs objects of specially selected colors to show it. To effect any substantial improvement the deficiencies of the plate must be compensated by the adjustment of the light.

The possible positions of the color screen are often enumerated, but as a matter of fact it may be anywhere between the light and the sensitive plate. If an electric or magnesium lamp is used, it may be convenient to fix the screen on the lantern. It is sometimes stated that in this case the screen need not be flat, but this idea seems to be founded on an erroneous view of the circumstances of the case. The effect of an irregular piece of glass when near the source of light may be clearly seen by holding a piece of white paper a foot or two from an incandescent electric lamp, when it will be seen that the unevenness of the illumination would render such lamps useless for many purposes. If daylight is used, the windows through which it is admitted may be covered with the colored medium. This method has actually been employed with considerable success, but experimentally it is cumbrous, and the color of the admitted light cannot be readily controlled. When the screen is between the light and the object, the important matter to regard is that the evenness of the illumination is not interfered with, and when a single light is employed, such irregularity is not unlikely to occur.

The next position in order is between the object and the lens. In this case it will be generally placed close to the lens, because there it may

be smaller than if nearer the object, and the lens forms a convenient support for it. If nearer the object, as for example the object being in a glass case with a colored front or immediately behind a colored screen, there follows the risk of reflection from the surface of the colored glass that is next the lens, a possible trouble met with in other cases, and not insuperable though better avoided. The colored screen may be within the lens; if close to the diaphragm a smaller screen will serve than if in any other position; or within the camera, immediately behind the lens or immediately in front of the plate being the two positions generally preferred for convenience sake.

The advantages of putting the screen close to the plate have been unduly exaggerated. Here an opaque speck will cast a sharp shadow, while the same flaw immediately in front of the lens would not affect the image. Indeed, the balance of advantage is undoubtedly in favor of keeping the screen out of the camera altogether (except so far as may concern the changing of lenses in some cases), for it is a fundamental principle to let into the camera, as far as possible, only that light that is actually required. I consider that, taking all things into consideration, the two best places for the screen are close to the lens outside the camera, and as near as possible to the source of illumination.

Before determining the character of the color screen, it is necessary to settle what is really wanted in the photograph. Is the print furnished by the negative to represent the object as

it appears by daylight or by what other light? This must be settled, because, as stated before, color depends upon light, and changes as the light varies. We are sometimes told that color screens are not necessary at sunset, when the light is yellow. And that is true if the yellow sunset is to be represented as if it were not yellow, as if, in short, it were a sunset lit by a mid-day sun. By choosing an illuminant that is deficient in those rays to which the plate is unduly sensitive, a certain amount of correction can be obtained without a color screen. Ordinary gas flames give a yellow light, and will be found to give an effect on the plate about equal to average daylight that has passed through a yellow screen that requires

C. S. Bourgeois.
BIRCHES IN WINTER.

flames and incandescent electric lights. But every different light has its own color and produces its characteristic color effect. A screen, therefore, that will give a daylight effect with one artificial light may be very unsuitable for another.

But if it is desired that the effect shall vary with the light, that is, that what is photographed shall appear in the print as it appears to the eye, whether it is seen by full daylight, by the yellow light of sunset, or by any artificial light that may happen to be used at the time of the exposure, then the screen must be adapted to the plate once for all and always used with it. A photograph made by gas-light will then be different from a photograph made by daylight, just as the object is different in appearance under the two different circumstances. If a photographer does not know what he wants, he can never know what he ought to do.

Pinhole) P. C. Baker.
IN THE WOODS.

an increase of exposure of from four to six times. I do not know of any other artificial lights that are more convenient and useful because of their deficiency in blue, than ordinary gas

POT HUNTING.

Pot-hunting is an outcome of medal-greed, has been for several months occupying the correspondence columns of some of our British contemporaries, and may be either good or bad, according to how it is looked at and how it is conducted. Briefly, it is the desire to secure medals or other awards by sending the same picture or pictures to every exhibition all over the country from year's end to year's end, and in some cases from year to year.

On the one hand, it is maintained that the capturing of medals, espe-

(Pinhole) W. F. Provo.
ORCHARD IN WINTER.

cially in the smaller exhibitions throughout the country, or rather the showing of the pictures that capture them to the members of the smaller provincial societies and clubs who never see the larger and more important shows, exercises a powerful influence for good, stimulating them to aim at doing likewise; and that to a far greater extent than could be done by a "Champion" class by noted

extent that is sufficiently discouraging to prevent the more timid ones from exhibiting, and medals that should have remained at home go to those who little deserve them.

And the effect on the successful medal hunters is even worse. That they continue to send their one picture from exhibition to exhibition is abundant evidence either that it was the result of a fluke or that they think

Cleveland Camera Club
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AT THE CLOSE OF DAY.

C. S. Bourgeois.

pictorialists whose work they were too modest to expect to emulate. On the other side of the question the effect is said to be altogether injurious; and especially to the members of the smaller societies. The prints sent from exhibition to exhibition, more often than not the results of "flukes," soon become known and their medal catching qualities recognized to an

they have reached the top of the photographic ladder and are content to lie on their oars ever after.

We must take care, however, to discriminate between the Pot-hunter and the author of a picture that is head and shoulders above most of the best; such as several that most pictorial photographers can easily call to mind, and which it would be a sin against

pictorial photography to withhold from any exhibition in which it could be hung. Such pictures cannot be too often seen, although they are rarely sent where medals are given, or when they are they are more often than not marked "not for competition." Their popularity does not prevent their authors from pressing on for still higher

essary and certainly served a good purpose, but the more we consider the matter the more we think that, on the whole, photography would be better without them. With very few exceptions, they are not given in the best or more important exhibitions, and, as we have often tried to show, the art would be better without the

Cleveland Camera Club
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HILL PASTURES.

F. C. Baker.

triumphs but rather serves as an inspiration, and not to them only, but to all who are privileged to see them.

And all this leads us to a renewal of the old question of whether the time has not come for the total abolition of the medal or other award giving. During the earlier decades of photography they were perhaps nec-

essary and certainly served a good purpose, but the more we consider the matter the more we think that, on the whole, photography would be better without them. With very few exceptions, they are not given in the best or more important exhibitions, and, as we have often tried to show, the art would be better without the

exhibitions of the lower order. Pictorial photographers in the true sense of the word do not exhibit at them, and even when the judges are competent they have to make the awards to a few of the best of a poor lot, with the result that success is about the worst thing that could befall the recipient.

INDIAN WARRIOR

Elian Golden sky, Philadelphia.

If, however, those small exhibitions, those got up for advertising or similar purposes, are to continue and medals are to be awarded, only competent judges should be employed,

and they should insist on the right to refuse to make awards unless the exhibits came up to a certain standard in both pictorial and technical quality.

THE TRINITY OF TECHNIQUE.

Backing.

BY DR. JOHN NICOL.

Probably nineteen out of every twenty photographers would be in- has received perhaps more attention and been written about more fre-

Cleveland Camera Club
Exhibition.

OCTOBER WOODS.

C. S. Bourgeois.

clined to think that as the remaining member of the trinity of technique development is of more importance and should be preferred to the backing of the plate, but I think not.

It is true that since the use of the gelatino-bromide dry plate or film became almost universal development

quently than any other of the operations included in the practice of photography, but that was because of the apparent difficulty of arriving at anything approximating to correct exposure, and certainly nine-tenths of all such writings have dealt with methods of treating under or over-

exposures. Whatever may be said to the contrary, when plates that are orthochromatic, and consequently give fairly correct luminosities, have been correctly exposed, their development is practically mechanical, and with a suitable developer is simply a matter of time.

Correct exposure means that the plate has been exposed just long enough for every degree of light reflected from the subject to impress it-

on the lights in greater degree than on the darks, until all the former are, in the negative, equally opaque, and in the print from it equally white, simply white paper.

It will thus be evident that, with correct exposure, the only care in development is to know when to stop it, a thing that may easily be learned by a little practice, or, better still, by employing "time development" as introduced by Watkins and frequently ex-

Cleveland Camera Club
Exhibition.

SNOW BOUND.

W. F. Provo

self in relation to its intensity on the sensitive surface and when that is secured development is merely the reduction of the so impressed or acted on silver bromide in the same relative proportions. But the action of the developer is cumulative and if not stopped at the proper time, *i. e.*, when the lights and darks are each in their proper relation, will continue to build on the foundation already laid, and

plained in the previous volumes of this and other magazines.

But, however perfect may be the gradation and correct the luminosities, the halation incident to the use of unbacked plates will keep the negative far short of technical perfection, hence the selection of "Backing" as the third of "the trinity of technique."

Halation is the spreading of the image or portions thereof to the right

and left of the space that it should occupy, easily recognized wherever dark lines appear against a light ground, such as branches against the sky; and generally to an extent that is offensive where a window is included in an interior. For this there are several causes, the most objectionable, and at the same time the most easily obviated, being reflection from the back of the plate. Of the light transmitted by the lens to the plate only a portion is consumed or converted into chemical action by the molecules of silver bromide on which it does its work, the rest simply passing through the glass and being reflected from the back surface.

It will be evident that whatever of this unabsorbed light passes through the plate at a right angle to its surface will be reflected back in the direction in which it came and so do no harm, theoretically indeed it should do some good; but such as enters at angles other than right will be returned at the same angles in the opposite direction, and the greater the angle the greater the spreading effect, the result being little short of blurring in some parts and in all a wooliness easily recognized on comparing negatives from unbacked with backed plates.

By "Backing" is understood the coating of the back of the plate with something that will absorb that transmitted light and so prevent its reflection back through the glass and into the sensitive film where it gets in its work. It must be understood, however, that whatever the backing may be it must be in optical contact

with the glass, and therefore the black velvet, black paper or other opaque material so often recommended are useless. Black or red paper moistened with glycerine, honey, molasses or other similar substances and squeegeed on to the back of the plate may, to a certain extent at least, answer the purpose, but they are messy and not to be recommended, and are not nearly so good as a suitable paint of a consistence easily applied with a brush, small sponge or tuft of cotton.

The authorities generally seem to think that such paint or a principal ingredient thereof should have a degree of refrangibility similar to that of the glass, caramel being generally recommended, but a careful examination of backing, both with and without such a substance, leads me to say emphatically that, whatever the theory, there is no difference in the results.

There are several thoroughly efficient backings on the market, some of them including caramel and some without, and all more or less easily applied and all that I have had an opportunity of trying have the three essential qualities, quick drying, no tendency to abrasion in repacking or when repacked, and ease of removal before development.

Those who prefer to make their own preparations may use either of the following or anything similar, any one of which will be found as efficient as any other, but the most convenient way to apply them, as well as some particulars regarding the commercial backing, must remain to be told in my next.

BOOK ILLUSTRATION BY THE CAMERA.

What one pair of girls have done other pairs of girls may do; and with a view to their encouragement thereunto we have pleasure in reproducing the following from the pages of *The Girl's Realm*:

There is a story connected with two girls and a career which reads like the beginnings of a fairy tale. Once, on the high part of Whittington, a mining village in Derbyshire, the village church went on fire. When the last flicker had died out, only the tower was left to the villagers of what had once been their church. Every soul put out a helping hand, however, and soon substantial subscriptions covered the bare cost of a new building. To add the proper decorations and equipment, naturally further sums were needed. An important item on the list was a window. The rector's two daughters thereupon determined that a subscription for the purpose of supplying this window should be inaugurated by their own effort. They possessed a very ordinary half-plate camera with two double slides. An announcement was posted in a village shop to the effect that members of the parish who wanted to help towards the providing of a window for the church might do so by having themselves photographed in the vicarage garden at the cost of 9d. per photograph. For a month the rector's daughters worked hard with their ordinary camera and their two double slides. One day as many as sixty people stood waiting on the pretty

lawn for their turn to come to be photographed. The two double slides changed plates with lightning rapidity, and only those who have tried to photograph more than two sets of people with only two slides at their disposal can possibly know what labor and quickness of action were involved for these two photographers in such an undertaking.

When the time for developing the plates and prints came, only an outdoor pump was at the disposal of the enterprising girls. Nevertheless, they accomplished all the work that came to them, and at the end of a month, after clearing expenses, £10 was handed to the rector on behalf of the new window.

Something more than the partial endowment of a window, however, was the outcome of this. The success of their efforts encouraged the two girls in quite a serious way to making a career for themselves as photographers.

Having removed to the picturesque environs of the beautiful old cathedral town of Chichester, the Misses Tomlinson, after the death of their father, used their talent for photography in an exceptionally clever way. Here was little chance of the ordinary business of the photographer becoming anything more than a small thing. But here was every chance for the artist. Cottages, old manor house, woods, meadows, and still mirror-like ponds, pretty village children, and interested, kind cottagers ready to pose

on every or any occasion; here were pictures—merely waiting to be adapted—for the artist to appreciate and arrange. So the Misses Tomlinson, seeing a unique opportunity, made photographs of children and child life, rural pictures of the cottagers in their own quaint homes, of passing incidents, of expressive joy or sorrow—and every photograph became a picture. Their work in this connection has proved most valuable to the publishers of books, who find that the Misses Tomlinson have a genius for following the text and meaning of a story so faithfully as to be able to accurately reproduce them in photographic illustration.

The secret of the success of such results, of course, lies in the trouble which the Misses Tomlinson take to secure a proper rendering of the text in their pretty pictures. For this they may be said to have the village in which they live at their disposal. Also the playtime resources of the school; for the kindly interest of the schoolmistress is with them in their labors. First, the Misses Tomlinson draw a sketch on paper of the picture they mean to produce. This is shown to the models, and the story to be illustrated is related to them. The co-operation is then complete.

The Misses Tomlinson, however, do not confine their efforts to children. "The Widow Wiley" and "The Kidnapping of Ettie" (Seeley) show pictures of "grown-ups," most cleverly posed and admirably conceived. Here is a stage on which are grouped the very people who say and do things within the covers of books. Every

detail is attended to, and no trouble spared towards getting the desired result. The Misses Tomlinson have a wardrobe which is now a most comprehensive affair, including all sorts and sizes of gowns, hats, etc., for the proper equipment of models.

No difficulty in the process of construction and realization of their pictures seems too great to be overcome. Some very beautiful photographs of cottage interiors have been taken in so small a room that any result at all seemed an impossibility. Miss Tomlinson tells me how the cottagers help in every particular turning their furniture topsy-turvy in order to allow room to the camera. Once, also, a most picturesque outer back-doorway had to be given up because of a high heap of earth lying near, which prevented the photographer from getting the doorway into the camera in any kind of way. Next day the cottagers sent word—the doorway could now be taken. They had removed the heap that morning.

In other and more serious ways, the Misses Tomlinson remove obstacles which seem to the surprised onlooker absolutely insurmountable. They have no studio as yet, and take a large number of photographs in their own bedroom, a small one, but very well lighted. For an access of picturesqueness in their own garden and the surrounding country, they have to pay in a decrease of household equipment. Their dark room has to be formed in the back kitchen at night, and the resources of one water tap are responsible for the clear perfection of every negative and every

print. Any girls who know the difficulties of developing must understand what talents go to the making of beautiful pictures under these conditions. The Misses Tomlinson have triumphed right along the line, but contemplate a properly fitted studio to be built near by where they may work with less trouble to themselves.

It does not do to explain how, with no training in photography, the Misses Tomlinson have brought the composition of photographs to a fine art. They gave no inklings of the patience and ingenuity entailed in their making of pictures, and I could hardly believe it possible that all these recent and beautiful productions of theirs—in this age of new improvements occurring almost daily in every photographic contrivance—have been

taken with one camera. There are other details to their work beside the purely mechanical—playing with a baby for an hour or more in order to get it into the mood for being photographed; working long with grown-up people in order to escape the self-conscious expression so fatal to a picture; training six different children to six different attitudes, and so on; these are only a few of the exigencies to be dealt with by the illustrative photographer.

The two sisters work always together, but in this way. Each has her own idea of what the picture should be and takes her photograph accordingly. Two proofs are sent to the publisher to choose from, with the pleasant result that "honors are easy."

THE PORTRAIT AND THE STUDIO.

Under the above caption Mr. H. Snowden Ward, editor of *The Photogram*, has been writing in that magazine a series of articles or interviews with professional photographers, each illustrated by a portrait of himself, with a view, we suppose, to show the results of the different methods of treatment, and to arrive, as far as possible, at the motives underlying the various methods.

During his recent visit to this country he interviewed and was photographed by several of our best known men, including B. J. Falk and Pirie Macdonald, and as the observations of the latter on his own method are those of one who has met with a large

measure of success, they are of sufficient interest to warrant our reproducing them.

He says: "During all the time I have known you I have considered that the key to your character was 'quiz.' I note that you listen to any story or statement that may be going, and when the speaker has finished, you look up at him to judge from his face whether he has been telling you the truth and the whole truth. To obtain this expression, I had to make several exposures which I knew would not satisfy me. I had to get you interested in my work and in my talk, and forgetful of yourself. Therefore, while studying your face, mak-

ing three or four different arrangements and making exposures of them, I was all the time working toward what I wanted. I know that with most sitters an expression requires time to grow, and that if it is a natural expression there must be pauses in the growth; therefore during each posing, I talked to you (and this is my method with almost all sitters), but the moment I felt that your interest was flagging or your expression liable to be strained in the least, I made an exposure and changed the plateholder, which broke the chain of conversation but which left you on the way toward the expression that I wanted. I usually begin with positions and lightings which are quite satisfactory, and in my experience the proper expression and the best lighting and pose to embody that expression almost invariably come together. They are seldom good enough before

the fifth exposure, and very seldom indeed are they later than the seventh. When I have reached the good one I am always quite sure of it, so that I do not need to make more exposures. I have at times made more than seven exposures in one sitting, and obtained a satisfactory result, but these are rare cases. Generally, if I have made seven exposures without being satisfied, I make some excuse for a new sitting. By this method I 'waste' many hundreds of dollars' worth of plates in a year, and I have tried the experiment of making my first two or three exposures on blank holders. Theoretically, it ought to be possible to 'dummy' the exposures during which the expression is growing, and to put in the plate only when pose and expression are satisfactory. I do not know why this scheme will not work, but I have never been able to make it do so."

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

A contemporary wonders why background painters paint their subjects in a "blurred" way instead of making the objects composing them definite and distinct, referring, of course, to the background employed by professional portraitists. Surely the reason is not far to seek. The portrait is the object on which the eye is intended to rest and the less definite and distinct its surroundings the more likely will it be to do so. If the portrait photographer *must* have a

scenic background, indication and suggestion will always be more satisfactory than definition and distinctness.

The same contemporary is taken to task by a correspondent for speaking of "kodaks and cameras" apparently under the impression that the terms are synonymous; and instead of telling him the difference the writer says: "We think you are hunting trouble, or else trying to give us some." It should be known that while all kodaks

are cameras, all cameras are not kodaks, only those made by the Eastman companies under one or other of the various names by which they have been or are now known are entitled to that much advertised name.

* * *

How often are mountains made out of mole hills. A writer in a contemporary, writing on "little things," has such a poor opinion of the abilities of the amateur that it is to be hoped that he does not "measure other people's corn by his own bushel." Speaking of exposure, he says: "Various devices have been made for the purpose of guiding one in making the proper exposure. They are generally impracticable and of little value to the amateur. So many things must be taken into consideration in trying to follow an exposure meter or table that one is apt to become hopelessly bewildered." Surely he cannot have seen either the Wynne or the Watkins meter. I am using the former and its use involves only two operations, each simple enough for the proverbial child, for the finding of an exposure that shall be practically correct within the latitude of any plate.

* * *

Dr. E. H. Cook, who says he has something to do with education in Bristol (England), had better learn a little more before he begins to teach, at least in the history of photography. At a recent opening of a kodak exhibition in that city he delivered the opening address, in which he said that one of the first to secure light pictures was a Bristolian named

Humphry Davy, but his pictures rapidly faded away until five and thirty years after, when Daguerre "found a way of fixing them," and then a West of Englander, although not a Bristolian, Talbot, about the same time brought out the old "Wet Plate Process."

* * *

Never to have heard of Dr. S. Weir Mitchell is doubtless more my fault than his, but now that I *have* heard of him it is hardly to his advantage. He is reported to have said, in a recent lecture in Philadelphia, referring to the employment of lantern illustrations, "The popular lecturer of to-day is of degenerate descent, and third rate intelligence, who aids himself with lantern slides. It is not worth listening to a lecture by a man who cannot make his personality felt." Just what the Doctor means by making his personality felt, and what the lantern slide has to do with preventing it, I do not know. One thing I do know, however, and it is that if the Doctor had been able to do as well without slides as some that I have heard with them, he would be far better known than he is. The silly statement reminds me of an incident that occurred long, long ago, and at a time when there was more excuse for the kind of ignorance which it implies. At a meeting of the Royal Scottish Society of Arts in Edinburgh, I was speaking in favor of a proposal to establish a fixed screen for lantern lectures, just then beginning to be recognized, when the then recently appointed Director of the Museum of Science and Art, Professor

Archer, with as little knowledge of the value of the lantern as a means of illustration as apparently our Doctor Weir Mitchell, objected to anything of the kind on the ground that the lantern was only a toy for the amusement of children. Others of the Fellows, however, knew better, and the screen was erected and has been in more or less constant use ever since. But the gist of the story lies in the fact that within less than three years of the meeting mentioned, and when the great lecture hall of the museum was being furnished, the same director employed me to plan a

lantern arrangement under the sloping gallery, and shortly after I had the honor to deliver the first lecture in that magnificent lecture room, the subject being "The Great Pyramid with Lantern Illustrations." The time is easily fixed because each of the Edinburgh big wigs who had recently returned from the opening of the Suez Canal wore on his head or carried in his hand the fez that seemed to have been the right thing to get while in Egypt. Will our Doctor Mitchell be as able and as honest—will he see and confess his error as did Professor Archer?

THE COLLOTYPE PROCESS FOR POSTCARDS.

What is collotype? Not one out of every hundred professional photographers in America could tell, and yet, if properly understood and wrought it would be one of the, to them, most useful of all the side issues of photography. It is a printing method by which hundreds of beautiful prints may be made at a cost of less than tens by any other, and withall so simple that he who cannot practise it has mistaken his calling and should turn his attention to the sawing of wood and the drawing of water.

In the hope of attracting the attention of some who have never thought of it, we extract the following from *The British Journal of Photography*, and although it is mainly directed to the production of the popular post-card picture, advertising and other uses will suggest themselves to the energetic photographer.

The picture post-card boom, although perhaps not quite so pronounced as at first, shows no real signs of abatement. Those photographers who seized their opportunity to create a fresh trade, as a welcome diversion for the slack season, are still reaping a satisfactory recompense. It is, however, rather surprising that so few workers have seen fit to adopt the collotype process as a means of reproduction, preferring in the majority of cases, when doing the work themselves, to print in bromide. It can hardly be known how really simple in operation and sure in result the collotype process proves itself once a few leading principles have been grasped. A few remarks on the subject may not be unacceptable to those who are already engaged in the production of photographic postcards

or who contemplate undertaking them.

It is a settled conviction with many that an expensive press is necessary. This is by no means the case. An ordinary letter-copying press will do very good work, several patterns of printing-presses may be readily adapted, while an excellent collotype press, taking a $10 \times 7\frac{3}{4}$, may be obtained for about seven guineas (\$35). The drying oven for the plates, although a great advantage, is not absolutely indispensable; a very good substitute may be quickly made with a suitably perforated wooden box, provided with a metal shelf for the sand-bath, properly levelled ledges for the plates, and a couple of long atmospheric gas burners connected with a rubber tube for heating. The box is open at the top, and covered during use with a canvas lid to allow of free ventilation. The preparation of the glass plates presents little difficulty to a careful worker. Glasses of suitable size are obtainable of any dealer in photo-mechanical goods. It is advisable at first to buy them ready ground; when a little experience has been gained they may be ground as wanted by placing the finest emery powder between the glasses, well wetting with water, and rubbing them over each other till both are sufficiently ground they are then well washed and dried. Before they can be sensitized a substratum must be applied to the glass.

A good formula is as follows:—Albumen, 5 oz.; potassium silicate, 2 oz.; water, 5 oz. This should be well mixed and filtered, and poured over the plate in much the same way as a

varnish. The latter is then placed in a rack to dry; when dry it is rinsed under the tap and again dried. A suitable formula for sensitizing is Creutz middle hard gelatine, 1 oz.; potassium bichromate, 50 grs.; ammonia bichromate, 30 grs.; chrome alum, 1 gr.; water, 10 oz. The water is divided into two portions, the gelatine being placed in one and the bichromates and chrome alum in the other. As soon as the gelatine has absorbed the water it is melted by a gentle heat and the bichromate solution added gradually, stirring well. The solution is then filtered through swansdown, calico, or wash-leather before it has time to get cool. For this purpose a filter pump or similar device is very useful. When filtered the solution is ready for application to the plates, which should be first warmed. The liquid is poured on similarly to a varnish, helping it where desirable with a clean glass rod. It is now placed to dry on a perfectly level shelf or slab in the drying oven for about two hours, the most suitable temperature being about 120 degrees Fahr. Draughts and vibration should be carefully avoided during the drying. The plates should dry evenly, absolutely free from streaks, and with a dull matt surface. They are then ready for exposure. A printing frame with wedges or screws is preferable, but for post-card work not absolutely necessary so long as close pressure and contact can be ensured. The most suitable negative is one that is soft, with ample gradation and detail; hard negatives are quite useless if the best results are desired. The edges of the

negative are masked by gumming on narrow strips of tinfoil to the desired shape. Printing is judged by looking at the back of the plate; a faint brown image is visible, and detail should be perceptible in the high lights. Those who prefer it may work with an actinometer after one or two preliminary experiments. Development is effected by washing with cold water until the bichromate is completely removed; this will take about an hour and a half to two hours. The image will be invisible, but will perhaps show a slight amount of relief. The plate is then stood up to dry. Before it can be printed from it must be treated with what is known as "the etch," a solution intended to be thoroughly damp and keep it in a moist condition. The term is a misnomer, for no actual etching takes place. A good formula for this is water, 10 oz.; glyc-
erine, 15 oz.; sodium chloride, 25 grs. The plate is levelled and the solution poured over, allowing it to remain for from a quarter of an hour to three hours, according to the hardness or softness of the plate, a factor which naturally depends on the exposure given. An over-exposed plate will need to remain longer under the solution than a normally exposed one. It is better to give, say, half an hour first, then to wipe off the solution with a sponge, and gently dry the plate with a clean rag. The plate can now be placed in the press, inked, and an impression pulled, when, if unsatisfactory, the ink may be removed with turpentine and a further etch given.

An ink slab, a small quantity of thick collotype ink, a fine nap roller,

and a composition or gelatine roller are now required. For the ink slab an old lithographic stone may be used, on which the thick ink is to be worked up with a little collotype varnish and a palette knife. The ink should be used as stiff as possible, and is applied to the plate with a nap roller, a fair amount of pressure being used and the work being done rather slowly until the plate appears black all over. The latter is now rolled with the composition roller, more rapidly and with less pressure. This will clean the picture up a good deal, and several proofs can now be taken, when it will be seen whether the plate requires re-etching or other treatment. The margins may be cleaned, if necessary, with a strong solution of hypo or by masking the edges with strips of oiled paper. Care must be taken that the plate is well cleaned at the back before placing in the press, as the slightest grit or inequality will cause it to crack under pressure. It must be accurately levelled, and laid on about half a dozen sheets of thick blotting-paper as a bedding. Perhaps enough has been said to show that the collotype process is by no means so difficult as many imagine. With the aid of one of the various excellent and inexpensive manuals on the subject now obtainable it should be quite possible to master the initial difficulties with a moderate amount of perseverance, in a very short time. There are, it should be mentioned, one or two even simpler modifications of collotype, in which the necessity for a glass plate is done away with; these are peculiarly adapted for postcard work, where

very large numbers of prints from one negative are not desired. The photographic worker who makes a chronic complaint of "bad business" is strongly urged to make a trial of the many possibilities of collotype,

not only for postcard work, but for the numerous other purposes which will readily suggest themselves, not the least of which is the rapid completion of orders in dull weather.

NOTES.

TESTING SILVER PRINTS FOR PERMANENCE.—*Photography* in its April 16th number, reproduces Dr. Leo Baekeland's method of testing silver prints for permanence, described at the Berlin International Convention without comment, although it must have known that the method, or at least the suggestion to employ it, was as old almost, as photography itself. When first suggested, probably in the early fifties, it created a smile, nor has it done much more to those who have tried it from then till now. Few silver prints could be subjected to the action of ammonium sulphide without being more or less affected. We have never found one but we know that prints from a batch in some that when so exposed altered considerably have, in an album, remained practically unchanged for about thirty years. His test, in its simplest form was as follows: A round glass jar was arranged which could be closed at the top by means of a glass plate. All the prints which had to be examined and compared were cut in halves; one of the halves was put aside for future comparison, and the other was placed vertically against the wall of the glass vessel with the picture side facing the center. All the prints should be un-

der the same condition of finish, either all unmounted, or if mounted the same kind of mounting paper should be used. In the centre of the glass vessel he put a porcelain cup containing some ammonium sulphide. Then, after covering the top of the vessel, everything was left in this condition for two hours.

At the end of that time the prints were compared with each other and with the halves kept aside, the observed changes giving, according to Dr. Baekeland, a reliable indication of the relative permanency of the different prints.

TIMING PINHOLE EXPOSURES BY THE WYNNE METER.—An esteemed and thoroughly reliable correspondent sends us a print, perfectly exposed and with sufficient detail or definition even for record work; accompanied by the following two methods by either of which equally perfect exposure may be ascertained.

"Set the needle hole (No. 12 needle) at five inches from the plate, and give sixteen times the 'actinometer time,' the time taken to darken the test paper of the Wynne Meter to the standard shade." Or "use f-45 and read the exposure in minutes instead of

seconds, and should the light be such as to require minutes to color the sensitive paper to the test shade read hours for minutes." The former is the simpler, but both will be found equally correct.

Since writing the above our correspondent has sent another print practically a fac-simile of that already mentioned, but taken with the lens and from the same point of view, and although the difference is very slight it is sufficient to induce all of those to whom we have shown them to prefer that by the pinhole.

A PLEA FOR TIME EXPOSURES.—The well-known photographer F. M. Sutcliffe, in the course of an article in *The Amateur Photographer*, has the following sentence, which to those who can take it, is a valuable hint as to how partly at least, he has ascended so high on the photographic ladder. The article is professedly a reply to a letter from a stranger complaining of want of success in his attempts to photograph the picturesque in Scarborough, work in which Mr. Sutcliffe had been preeminently successful. He says: "It is a strange fact, most of the best photographs of this coast have been made by men who were accustomed to the long exposures which wet plates wanted. Many of the most successful amateurs who come here year after year are old wet-plate men who never forget their tripod. The beginner who thinks of coming north should remember this, that a tripod is of far more use than an instantaneous shutter. I must apologize for speaking of my own

work, but it may interest some to know that I have not an instantaneous shutter for my eight-inch landscape lens, f-11, and I do not remember ever having wished for one! for my rapid rectilinear, f-8. I have a Thornton-Pickard blind-shutter, but this is very rarely set at anything but 'Time.'"

THE NERNST LAMP FOR THE LANTERN.—We have often envied our friends across the water for the hundred and one appliances that are within their reach but that we cannot get because of tariff troubles. Another case in point is a recent adaptation of the Nernst lamp to the lantern; one that gives a splendid light with the least possible trouble and at a come-at-able price. A lamp complete including tray ready to slide into the lantern, and that with 1 ampere and 200 volts gives a light equal to 230 candles for under five dollars.

EXPOSURE.—The following words of wisdom occur in an answer to a correspondent in *Photography*. "If one tenth part of the time commonly wasted in attempts to modify the developer to suit faulty exposures were devoted to learning how to expose correctly, good negatives would be more common than they are now."

THE UNION OF THE GRAMOPHONE AND THE CINEMATOGRAPH has at last been effected, as will be seen from the following paragraph clipped from *The British Journal of Photography*:

The Chronophone.—At the Grand Theatre, Fulham, on Thursday last (April 14th), a private demonstration

of speaking animated pictures—known as “the Chronophone”—was given before a full house, and a very favorable verdict indeed was passed by those present on this latest combination of the phonograph and the cinematograph. The Chronophone is the English edition of the Gaumont-Messter patents already considerably exploited in Germany under the title of “the Biophotophone,” and the secret of its success seems to lie in the perfect synchronization between the talking and projecting machines. This appears to be perfect, and is, we are told, effected by electrical means. Every tone synchronizes with its corresponding movement on the screen in a manner that appears at first uncanny, but opens up endless possibilities in the way of production of not only single scenes, but entire plays. The programme presented by the Chronophone on the present occasion included many realistic scenes. One incident was the drilling of a number of soldiers, the words of command ringing out and being immediately acted upon by the soldiers. A song from Lohengrin formed another item, and a laughing, jostling crowd at a race-course, a xylophone trio, and a comic coon song were other successful pictures. Given a really good phonograph, or gramophone, of sufficient timbre to aid the illusion, and the best films obtainable of the subjects portrayed, a successful future may be predicted for the invention.

NEGATIVES ON BROMIDE PAPER.—Enlarged negatives from small ones are coming more and more into favor

and therefore we gladly extract the following from *The Barnet Photographic Record*, a journal issued by the makers of a favorite paper in England but not the less reliable for that. “We have recently been making some carbon prints at our works from large negatives, which, instead of being made on glass, were on Barnet smooth bromide paper, and the results have been so satisfactory that it is well to put them on record for the benefit of our readers. The transparencies were made by the carbon process, and from these the enlargements on the bromide paper were made in the usual manner. The negatives so obtained may be printed just as they are or they may be waxed. If the paper negatives are printed without being waxed they will be found to require three times as much exposure as would a glass negative of equal density. This exposure is reduced to about a third by the use of Barnet waxing solution or some such medium. There is no trouble whatever with the grain of the paper, and the back surface of the paper negative is an excellent one for working upon with a stump or pencil. For those to whom the length of time taken to print is little or no drawback, and this should include the great majority of amateurs who require as a rule only one or two first-rate prints from a negative rather than a great many, this use of bromide paper will be found both convenient and economical. The negatives are stored more easily than glass ones, are free from risk of breakage, and are light and handy.” We have used the Rotograph negative paper

with perfect success, although almost any good thin bromide paper will answer the purpose very well.

INTENSIFICATION WITHOUT METALLIC SALTS.—Mr. J. S. Teape, at a recent meeting of the L. and P.P. A., read a paper entitled "Intensification Without Metallic Salts," and claimed that better results can be obtained than when either mercury (the most universally used) or uranium were used. Neither method was under control, or reasonably permanent, although Mr. Haddon, at the previous meeting, had shown how the mercurial method could be made more permanent. Mr. Teape gave two alternative methods—one in which the image is chlorized, washed, and redeveloped; in the other it is bromized, washed, and redeveloped, the former being suitable where only a little increase of intensity is required, the latter where a greater. There is no risk of stains, and the permanency is undoubted. Elaborate experiments were detailed, and careful comparative results shown. The formula for chlorizing the image is: Potass bichromate, 5 grains; potass chloride, 10 grains; hydrochloric acid, 4 minims; water, 1 ounce. For bromizing: Potass bichromate, 5 grains; potass bromide, 10 grains; hydrochloric acid, 4 minims; water, 1 ounce. The negative may be soaked in water, or may be put into the solutions dry. Allow to remain in the solution a little time after the image is bleached right through, then wash for (say) half an hour, then redevelop with any formula in general use. With a chlorized

image adurol does not give so much increase of density as with a bromized image; with metol little difference can be detected; pyro-soda, pyro-ammonia, pyro-metol, all give great increase of density. Exposure to light before redevelopment accelerates the operation, but does not otherwise effect the final result. Temperature also plays its part; if below 60 deg. F. the action is slow, above 60 deg. it is much quicker. The above redevelopers give the image a brownish color, a color that helps in giving printing density; with hydroquinone the image is black, but the visual density is greater. To intensify the delicate tones only, soak the plate in water, then slightly chlorize the surface of film, wash, and redevelop. A second set of experiments went to show that excess of sulphite in the developer should be avoided, its action being to dissolve some of the silver, but more especially in the chlorized films. By a slight variation the above methods may be used for reducing intensity. The image is chlorized, then wash and redevelop a little further than the density ultimately required, rinse, and immerse in hypo bath. By this means you decrease the density of the dense portions and increase that of the delicate ones, and the specimens shown by Mr. Teape amply bore out his contention. Mr. Somerville could fully corroborate Mr. Teape's statements, but preferred to bleach in cupric bromide.

BLUE TRANSPARENCIES whether for three color work or window decoration, according to the *Moniteur de la*

Photographie, are rarely as good as they should be, and gives the following as a means of getting them at their best. A silver positive is first made, best on a lantern plate, and this having been well washed after development, is immersed, while the operator is still in the dark-room, in a freshly-made 1 to 10 solution of potassium ferricyanide. In a minute or so the image will be completely bleached out or obliterated by the conversion of the

metallic silver into silver ferrocyanide. Another thorough washing is now required, then immersion for a few seconds in a 1 to 20 solution of ferric chloride. Washing, fixation in an ordinary hypo bath, and a final washing, are now necessary. A point of considerable importance in making blue transparencies is that the original silver image should be bright and absolutely free from all traces of fog or surface deposit.

PYROGRAPHY OR WOOD BURNING.

V—Ornamental Placques.

By F. W. GAENSLY.

The accompanying illustrations are two very pretty placques, the subjects of which are very desirable for pyrography.

No. 1 is a Venetian water scene, which may be enlarged to any size by the squaring process as explained in last month's lesson.

Procure a circular placue and mark off a border as shown in the illustration. Enlarge the design upon the placque extending the tower into the border space. Then sketch a continuous design of not very large proportions in the border space, and proceed to the burning. With a moderately heated pen burn the outlines of the building in the foreground. These lines should be sharp and rather dark in order to avoid having the sky appear as though resting on the house-top. In fact all the burning on this part of the picture should be strong,

especially on the sides of the tower and where the open windows seem to disclose the blackness of space within. The dome should be gradually shaded to produce the round, ball-like appearance. The vine on the roof of the

building is composed of a number of jagged lines of irregular shape burned with the extreme point of the pen. The distant buildings are very delicately burned and the detail work should be avoided as much as possible or the effect of distance will be lost. In burning the reflections in the water great difficulty will be met with if the scholar does not possess a gas burning apparatus for so little heat is required in this part of the work that would be very difficult to produce the proper effect with any other apparatus. The border should be very contrasty and not elaborate in order that it will not detract from the beauty of the picture itself. Have the background of the border very dark and end abruptly at the inner circle which will make it appear as a separate frame as the illustration will show.

No. 2 is an excellent subject but great care is necessary to produce the proper facial expressions. These re-

quire very delicate lines and shading also a very small amount of heat and are executed with the extreme point of the pen. Do not allow the pen to rest upon the wood for any length of time in doing this part of the work but keep it in constant motion or the wood will become scorched. The robes are burned a very dark brown except in places where the light is reflected on the folds. Overlook no details in burning this picture especially on the faces where every line or bit of shading is necessary to give the proper expression which is the principle study in this picture. An excellent example of shading for rotund effects will be seen on the band in the lower end of the picture. Note the metallic effect of the hoops. The window does not appear as being of transparent glass, thereby relieving the scholar of the great difficulty of producing a transparent effect.

THE THEORY AND PRACTICE OF MOUNTING PHOTOGRAPHS.

A paper read at a meeting of the Photographic Society of New South Wales,

By W. C. FISCHER.

I.—THE RATIONALE OF MOUNTING AND FRAMING.

Photographs, in common with examples of pictorial art generally, are mounted and framed for the following reasons among others: (a) That they may be supported and held flat for convenient examination; (b) that they may be preserved, this being the sole function of the glazing which is in all other respects a disadvantage; (c) that they may be isolated from their surroundings, and thus saved from distracting influences; (d) that their beauties may be enhanced; and (e) that their defects may be

minimised. Now, the first three requirements—support, preservation, and isolation—might be filled satisfactorily by almost any style of mounting and framing selected at random; but it is far otherwise when it becomes a question of so designing the setting of the picture as to help the impression it is intended to convey. The proper application of the principles involved necessarily assumes the power to recognize the beauties and defects of our work. In fact, in this matter of mounting, as in every other department of our hobby, true progress seems to depend on our abil-

ity to see distinctly why our work is good and why it is bad. This is an accomplishment which may, and should be, sedulously cultivated by the comparison of our own work with that of other and especially better workers, and herein lies one of the main arguments in favor of belonging to a photographic society.

II.—TRIMMING THE PRINT.

A necessary and most important antecedent to mounting is trimming, unless we use "cut out" mounts, which themselves circumscribe the pictures. It is seldom that a composition satisfactorily fills a plate in all directions. My own endeavor is to make it do so in one direction, at least (horizontally or vertically), where possible, by choosing a suitable standpoint for the camera, and employing a lens of proper focus, and, if necessary, ringing the chances on these two factors until the best combination is found. Often it is not possible, and, if our object is to make enlargements, or lantern slides in the camera, it is unimportant, provided all that we want is on the plate. For in these two cases we practically trim the negative, and need sacrifice little or nothing of the final picture. In all other cases trimming is necessary, and I am afraid the art of trimming does not come by nature. The unregenerate photographer likes to get as much out of his negative, both in size and detail, as possible. He is never so happy as when photographing 500 square miles of country from the top of a hill with stop f-64, and then printing on the glossiest of papers to the full size of the negative. Of course he grows out of these idiosyncracies in time, and sometimes he grows a little too far out of some of them! There are several things to be taken into consideration before commencing to trim a print. We must determine what is the principal object or the dominant interest or sentiment of the picture, and if this presents difficulties, or is at all dubious, there is something radically wrong with our composition. We must decide whether the horizon, which is not necessarily the skyline,

will be better above or below the middle, for very seldom should it be exactly or approximately midway between the top and bottom of the picture. We must note objects which compete unduly with the principal object with a view to their excision, and we must look for lines and masses which are unbalanced, or which carry the eye out of the picture. Having discovered all these points, good or bad, we may begin to experiment as to the best way of placing the principal object where it should be—namely, near, but usually not at, the centre, of correctly locating the horizon, and of disposing of the other difficulties which one examination of the print has disclosed. We should tentatively cover up the portions of the print we propose to trim away, and critically examine the many possible arrangements before actually applying the knife. For the purpose of this examination there is nothing better than the old device of two L-shaped cards of a dark neutral shade. Let us realize that a square inch of interest is far better than a square yard of dullness, and let us frankly acknowledge that every photograph we make is not necessarily a champion, and that in many cases the most we can do is to make the best of a bad job. Having decided how the print should be trimmed, we proceed to carefully trim it. My own practice is to use a sharp penknife, a pair of compasses, a set-square, and a metal-edged wooden straight-edge, with either a sheet of plate-glass or a piece of cardboard to cut on. Probably a sheet of zinc mounted on a board by means of countersunk screws is the most satisfactory support of all. An oilstone should be close at hand. In the case of large prints it is best to first mark the boundaries with pencil lines, and afterwards cut just inside these. The base of the print must, of course, be made parallel to the ocean horizon or any distant water-line appearing in the picture, while the sides must similarly be brought into agreement with the vertical lines of any buildings which are included. The final shape of the print must be strictly rectangular. Some few subjects will submit to be

trimmed to a circular or elliptical shape, but landscapes, at any rate, which are amenable to this treatment are quite exceptional, and usually require to be composed on the focusing-screen with this end in view.

III.—MOUNTS PAST AND PRESENT.

When photography became a popular hobby, with the introduction of the commercial gelatino-bromide dry plate in 1878, practically the only printing method available was the silver albumen process, and in those early days it was considered the correct thing to mount these purple-toned prints on pure white boards—possibly with the humane intention of not putting out of countenance the pure white skies for which these works of art were so famous! These mounts were soon improved (?) by the addition of a series of printed lines, usually in bright colors, with elegant designs at the corners which made it hard to keep one's attention from wandering off the photograph. The "openings" of these mounts corresponded with the standard sizes of plates, it being regarded as the duty of every honest and well-meaning photographer to use the whole available surface of his negatives, as a practical application presumably of the motto, "Waste not, want not." I believe these mounts are still to be obtained. They were followed by others, either white or more or less tastefully tinted, with embossed designs round the edges. Next came the "india-tint, plate-sunk" mount, which, in many respects, was a great improvement on its predecessors, and is still a firm favorite with many. As, however, a photograph is not printed from a copper or steel plate in a press, the "plate-mark" is palpably fraudulent. Still more recent is the "slip-in" mount, which is extremely convenient, especially for lazy people, and is often tasteful and artistically simple. Unhappily, it also, of necessity, suffers from the generic defect of being made only in standard sizes. On the whole, then, it may be said that the popular varieties of ready-made mounts are excellent—to avoid. No arrangement which demands that the print

shall be made to fit the mount, and not *vice versa*, can possibly be satisfactory except in a few instances. There are happily evidences, however, that the dealers are coming into line with the awakening artistic aspirations of their clients, and there are now available excellent plain mounts and mounting papers in useful tints upon which prints of any shape may be placed, which themselves may be cut to any shape, and to which no exception can be taken.

IV.—THE CHARACTERISTIC OF A MOUNT.

The great truth to bear in mind is that the eye is easily deceived, that the sense of sight is much the most gullible of all our five senses, and that it can be readily made to imagine things which do not exist, and to exaggerate resemblances and differences which only exist in part. There are many experiments which illustrate this, but our present purpose is not so much with the fact as with the effect of optical illusions, and to inquire whether we as photographers can turn this curious physiological phenomenon to our advantage. Can we, by appropriate mounting, make a too dark print look lighter, or a too light print look darker, can we make a spotty print look less spotty, or a print of a bad color look a better color, can we draw attention to beauties and distract attention from defects—can we, in a word, improve the appearance of a print by the way we mount it? To all these questions the answer would most undoubtedly be "Yes." The effect of a mount depends among other things on (a) on its color, (b) its tone—lightness or darkness, (c) its texture, (d) its size, (e) its proportions, and (f) the position which the print occupies upon it. It would be impossible, within the limits of a single paper, to deal fully with all these points, though all merit full consideration. It will be necessary, therefore, to dismiss some of them in a summary manner.

V.—THE MINOR QUALITIES OF A MOUNT.

Regarding the *texture* of a mount, the simple rule is that, if we desire to draw attention to the smoothness of our print, we must place it on a somewhat rough

mount, and *vice versa*. Extremely rough mounts are seldom, and perfectly smooth (that is, glossy) mounts are practically never, admissible, but a large picture will, other things being equal, submit to a rougher mount than a small one. A similar avoidance of extremes is advisable in reference to the *size* of mounts. A small picture may have a larger mount relatively than a large picture. In fact, a large print may sometimes with advantage be framed "close up"—that is, with no visible mount, the frame in this case being usually a wide one, and fulfilling the double function of mount and frame. Only strong pictures of low tone seem to be suitable for this treatment. The *proportions* of a mount should seldom be the same as the proportions of the print; one authority says they should never be the same. That is to say that a 6x4 print should not be placed on a 12x8 or 15x10 mount. The mount should usually be longer in proportion than the print, the effect being to make the print look longer than it really is, which is generally desirable. A horizontal picture will bear a longer mount than a vertical picture of equal size. Coming now to the *position* of the print on the mount, it may be taken as a rule admitting of no exception that the print must be placed nearer the top than the bottom of the mount. The ready-made mount nearly always infringes this rule. One able writer says that the bottom margin should be at least three or four times as wide as the top margin, but this rule appears to be a little too inflexible, and at any rate calls for modification in the case of large prints. The practice of mounting an upright picture nearest the top left-hand corner of the mount seems to be hard to defend logically. As, however, in some instances the effect is undoubtedly good, no other excuse should be necessary in these cases. Another departure from the normal which often succeeds is the mounting of a horizontal print on a vertical mount. In this case the print must, of course, be placed high, and the title may well find a place on the vacant space below.

VI.—THE TONE OF A MOUNT.

The tone—that is, the relative darkness or lightness of the mount—is probably more important than any of the minor characteristics which have thus shortly been disposed of. Like all the others, it is a fit subject for experiment, but the following hints may serve to put experimenters on the right track. Usually a picture made up of light tones will be best suited by a light mount, but if the highest lights lack brilliance, a darker mount will help. On the other hand, a low-toned print usually demands a dark mount, unless the deepest tones (for example, the background to a portrait) need an added depth, in which case a lighter mount may be used with advantage. Pure white and absolute black, especially the latter, are seldom called for in simple mounts. Often, however, as a small part of more complex mounting systems they are indispensable.

VII.—THE COLOR OF THE MOUNT.

It is in the realm of color that the sight shows itself most astonishingly at fault. Every color area is affected more or less by the juxtaposition of other color areas. A piece of white or grey paper placed on a larger piece of a bright color will cease to look white or pure grey, and will, instead, take on more or less strongly a tint complementary to the color by which it is surrounded. In mounting a photograph we *must* take cognizance of this fact, and *may* take advantage of it. We may take one of two distinct courses, color-harmony or color-contrast, or we may to some extent combine the two. If we adopt the principle of color-harmony we mount our print upon a support of a color closely related to the dominant tint of the print—a brown print on a brown mount, or a blue print on a blue mount. If, on the other hand, we decide for color-contrast, we choose for our mount a color complementary to the prevailing tint of the photograph—a dark red mount for a blue print, or a green mount for a red or reddish print. Color-harmony is easy, produces quiet and restful results, and should inva-

riably be used for soft and delicate prints. Color-contrast, on the contrary, while it produces, when well done, very striking and beautiful effects, is only suitable for pictures which are themselves strong enough to dominate and hold the interest, and is very difficult to carry out successfully. The trouble often seems to be to decide *how much* of the contrasting color is allowable. Color-harmony needs no excuse, but, if well done, is always its own justification. Color-contrast, like a dissonance in music, while extremely effective in the right place, must give some logical account of itself, and justify its presence—it must lead *from* somewhere *to* somewhere. In the case of black and white subjects we can find no harmony or contrast except in black or white or the long range of pure greys between these extremes, and the safest course, no doubt, will be to choose our mounts accordingly. Nevertheless, to argue from these premises, as is done by some, that no colors must be used in mounting black and white pictures seems to be to make a purely academic deduction which is not warranted by facts. The same logic would debar us from mounting colored prints on black, white, or pure grey mounts, a position which the same theorists do not take up. Let me hasten to add, however, that, in departing from the practice thus theoretically laid down for us in regard to black and white pictures, we shall be well advised if we confine ourselves to cold colors, such as some shades of green. With blacks which are not pure—brownish, greenish, or bluish—the selection of admissible mount colors is naturally much more extensive.

VIII.—MULTIPLE MOUNTING.

We come now to the consideration of a method of mounting which is being largely used by some of the foremost workers. It consists in placing the print upon a greater or less number of variously tinted papers, each to a varying extent smaller than the one below it, the effect being to surround the picture with a series of bands or lines of color of different widths. This

method undoubtedly adds to the effectiveness and dignity of small prints when well done, but seems to be less necessary and of less general application in the case of large work. It may, with care, be made to yield exceedingly beautiful results, but, needless to say, it is easy to make a prodigious mess of it. As in all other departments of mounting, the secret of success, assuming the possession of the necessary good taste, is experiment. And our experiments should, if possible, be carried out by daylight. For this purpose small samples of the tinted papers available, cut to a perfectly rectangular shape, should be at hand. From these we select a few of apparently suitable tones, having regard to the principles of harmony and contrast, and arrange them with the print on top, and with various margins, confining our attention to one corner. When a suitable combination has been decided on, we may proceed to put our ideas into practice. We first, attach the print by a touch of some quick-drying adhesive at each corner to a sufficiently large piece of paper of a color corresponding to the margin which we have decided to place immediately adjacent to the print. When this is dry we mark the margins of the widths (not necessarily equal all round) already determined upon, and then trim off the superfluous paper, a guillotine trimmer being very convenient for this purpose. This combination is then attached in like manner to the next paper, which is then, in its turn, trimmed, and so on, the whole arrangement being finally fastened down in a similar way in its correct position on the mount. This is far better than the more obvious method of first cutting the papers, and then attaching them to one another, and placing the print on top. The actual work of mounting takes little time, and may be carried out at night, provided the previous experimenting, which may take as long as we like, has been done by daylight. It is impossible to lay down any definite rules for this work; each man must work out his own salvation. There are,

however, some fairly obvious general arrangements which may be suggested. A dark print may sometimes be surrounded by a series of related tints, commencing with a dark one next to the print, and gradually growing lighter until a light mount is reached, while the converse of this in the case of a light print is also sometimes effective. An arrangement of alternate cool and warm tints, but all of dull shades, is likewise good. A print in which the contrasts are somewhat too marked may have its defects disguised by a setting which is also strong in contrasts—a dark mount with white lines, for example. It will be seen that in this method of mounting we may apply at the same time the principles of both color-harmony and color-contrast. It cannot be too clearly recognized, however, that in this branch of photography, as in every other, we can always most surely display good taste by simplicity, and herein likewise we may always find safety.

IX.—MOUNTING PAPERS.

The available tinted papers for this and other less complex mounting methods are endless in number and variety. Sample books of cover papers may be procured free of any printers' supply house or of wholesale stationers. The thinner varieties of these covers are suitable for multiple mounting. Some of the Michallet and other crayon papers are suitable, and occasionally a plain wall paper, or the reversed side of a figured paper, may be pressed into service. Even some shades of ordinary brown wrapping paper are good, while special tints may be made at home by means of thin washes of water-color applied to Whatman and similar drawing papers, and, if necessary, repeated until the required depth of color is reached.

X.—THE PASSE-PARTOUT.

This is an arrangement which consists essentially in sandwiching the print on its mount between a sheet of glass and a backing of cardboard of corresponding size, the whole combination being bound round the

edges, after the manner of a lantern slide, with suitably colored strips of paper or cloth, and arrangements being made for the attachment of a cord for hanging. A frame is in this way dispensed with, often very effectively, and at an absurdly small outlay.

XI.—MOUNTANTS.

To come down to the somewhat sordid details of mounting, it may be pointed out that a good mountant (*a*) must stick well and promptly, (*b*) must not prejudicially affect the print either chemically, mechanically, or by discoloration, (*c*) must be easy to use, (*d*) must be easy to prepare or require no preparation, and (*e*) must not cockle the mount. The ideal mountant has yet to be invented. My own practice for ordinary mounting is to use either fresh starch paste, which must be properly made to give satisfaction, or Higgin's Photo-Mounter, an excellent and ever-ready preparation. For multiple-mounting I use a touch of liquid glue at each corner of the print and of the successive papers, and find that it dries quickly and sticks well, a short pressure under a weight, such as a pile of spoilt negatives, being sufficient to ensure perfect adhesion. My ordinary mounting brush is a medium-sized painters sash-tool with both birstles and handle shortened, which is soaked in water for a short time before use.

XII.—FRAMING.

The framing of photographs is not part of my subject, but as good framing depends on practically the same principles as good mounting, and is equally important, it seems inexpedient to conclude this paper without a brief reference to one or two phases of framing. No picture in monochrome, photographic or otherwise, will submit to a heavy gilt frame. No more than a narrow band of gold is permissible in combination with a non-gilt molding, and that only with pictures other than black and white. Even this limited amount of gold must be used with discretion, and only with some pictures. For a black and

white photograph the gold must be omitted, but may in some cases with good effect be replaced by silver. The same practice should be observed with regard to the bevels of cut-out mounts, which in most cases look best when colored to match the surface of the mounts, though gold or

silver may be used on occasions. Pictures which are to be hung in an ordinary room at home will not, as a rule, require to be so heavily mounted and framed as those which are to hang cheek by jowl with many competitors on an exhibition wall.—*The Photographic News*.

A NEW MERCURY-VAPOR LAMP.

Improvement in efficiency and simplicity and consequently cheapness is the order of the day. Hardly have the advantages of the Cooper-Hewitt Mercury Vapor Lamp, from a photographic point of view, begun to be recognized than the Bastian lamp makes its appearance, working to a certain extent on the same lines, but so arranged as to be practically automatic, and while giving per Watt ten times the candle power of the usual incandescent bulb, costing complete only about six and a half dollars, and, unless through accident, never needing renewal. Hardly anything can happen to the hanging holder and electro-magnetic tilting device, and should the glass tube get broken it may be replaced for less than thirty cents. We clip the following notice and description from *The Amateur Photographer*.

In quite the best meaning of the term, the Bastian mercury vapor electric light is new, although in one sense it is little else than the mercurial electric light of half a century ago, introduced by Professor Way in 1856. There is, however, this difference: Messrs. Bastian and Salisbury have introduced a series of ingenious inventions which make the mercurial vapor light as convenient, as practically useful, and as safe as is the ordinary incandescent electric light, but the return or efficiency is about eight times that of the ordinary lamp. The original mercurial light of Way was magnificent in its results, astonishing in its output of light (and more especially in its output of actinic light), but quite impossible to use in every day life, and the inventor was killed by the fatal mercurial vapor

which was always diffused through the air.

Way's light was a discharge of low potential electricity across gaps in mercury, these gaps being produced by mechanical means, as by an electric motor, and the above description also applies to the new Bastian light, but its peculiar excellence centers on the fact that everything essential to the production of the light is sealed hermetically in a small glass tube, which can be fixed in position as easily as the usual incandescent lamp. Thus we get portability, convenience, and, above all, safety against mercurial poisoning.

Another feature is that Way's complex system of a continuously running motor is reduced by Messrs. Bastian and Salisbury to the simplest possible expression, as the most rudimentary of all electric motors, an electro magnet and keeper, makes the necessary break in the mercury column by a single tilt of the lamp, and this once for all when the current is first switched on.

This brings us to the most essential point in connection with mercurial vapor lamps in which a low potential current is used, as distinguished from the true or quasi vacuum tube lamps in which the induction coil discharge is employed. The conducting column of mercury must be broken mechanically, so that a semi-conducting trail of vapor shall be formed. Information as to the various rather crude and dangerous methods employed by Way nearly half a century ago does not concern us very much now, but any one who is curious in such things can refer to p. 27 and 28 of M. Hippolyte Fontaine's "Eclairage à l'Electricité,"

1879 edition. We are, however, concerned with the older details which are available regarding the actinic power of Way's light, as the recent improvement appears to be not so much an increase in the light produced as in making the light practicable and safe in use.

Turning to the Journal of the London Photographic Society (now Royal) for June 15th, 1861, (p. 199), we find a long account of photographic experiments with the mercury vapor light, and these experiments suffice to show how suitable this light may be for printing, and for all photographic work in which a deficient proportion of the red rays does not tell adversely. The fact that the light from the mercury vapor lamp consists almost entirely of ultra-violet, violet, blue, green and yellow, the deep orange and red being almost absent, seems likely to limit its usefulness when orthochromatic effects are essential. There appears, however, abundant scope for its use in connection with copying, enlarging, and perhaps in obtaining cinematograph pictures of indoor scenes.

At the demonstration of the new light recently given to some press representatives the deficiency in the red rays was well illustrated by the ghastly appearance of those present, the red of the face becoming purplish black. This deficiency in red will scarcely militate against the mercury vapor light for outdoor or street lighting, as the delicacies of color rendering become far less pronounced as any light is feebler or more diffused; hence the high luminous efficiency ($2\frac{1}{2}$ candles per Watt, as against the 0.25 candle per Watt of the usual incandescent lamp) should tell profitably.

The actual Bastian lamp or "burner," as now in the hands of the agents, Messrs. Rumney and Rumney, of 39, Victoria street, Westminster, consists of a quill-like glass tube; shaped into an inverted arch of about three inches span, a small bulb with sealed-in electrode of platinum being at each end of the tube. So much mercury is enclosed as to provide a free circuit for the current when the chord of the arch is hori-

zontal, but as soon as the current passes, the electro-magnet that is fixed in the upper part of the holder becomes instantly energized, and the lamp is automatically tilted so as to break the continuity of the mercury. The discharge now flashes over the gap, and the lamp becomes operative.

Although prices are not yet finally settled, we gather that the hanging holder, fitted with electro-magnetic tilting device and lamp complete, will cost about 25s., and fresh exhausted glass vessels for renewals will be about 2s. 6d. each, but we conjecture that when the best resources of modern glass-blowing are brought to bear on the manufacture, this latter cost may be much reduced. With respect to the enduring power of the tubes, we may say that we see no reason why they should deteriorate by long use like the usual incandescent electric lamps, and so we conjecture that accidental breakage should alone necessitate renewals.

* * *

Kallitype Process.

We will have an article shortly by one of our correspondents who has shown us some very beautiful prints by this process. A good formula is as follows:

Ferric oxalate.....	150 grains.
Potassium oxalate ..	30 grains.
Silver nitrate	30 grains.
Water	2 ounces.

This is the sensitizer and should be swabbed up and down and across the sheet of paper with a wad of cotton and dried in the dark. The fingers should not be allowed to touch the solution and a convenient method of application is to draw a wad of cotton with a bit of string into the mouth of a glass tube, using this as a brush and renewing the cotton next time it is used. The prints should print right out and are fixed by washing in

Sodium citrate	290 grains.
Citric acid	120 grains.
Water	10 ounces.

and afterwards in a weak solution of ammonia, about one-half ounce of ammonia .880 to the gallon of water.

The most frequent cause of failure is the impurity of the ferric oxalate. This should be procured from a reliable firm and should come in a brown sealed bottle and be kept from the light in a cool dry place.

* * *

Removing Stains from Bromide Prints.

The best way is to avoid them by using a clean working developer, rinsing off before placing in the hypo and seeing that they are thoroughly immersed in the hypo

until fixed. The following has been suggested as a stain remover and is worth a trial:

Iodine	60 grains.
Potassium cyanide ..	60 grains.
Potassium iodide	120 grains.
Water	10 grains.

This is the stock solution and keeps indefinitely. For use a few drops is taken in two ounces of water and the surface of the print rubbed with a wad of cotton moistened with it. Label poison.

MONTHLY PICTURE COMPETITION.

In the "Landscape with Figures" competition there were a large number of entries. Many of these were desultory snap-shots of very commonplace subjects, while a few showed evidence of artistic taste and a striving after the pictorial. The prize money has been awarded as follows: R. C. Born, 14 Jumel Terrace, N. Y. City, for his picture "The Man with the Hoe," an excellent composition, with that peculiar softness and atmosphere which is hard to get but is

essential in pictorial photography. Second: W. C. Webster, Jacquins, N. Y., "A Modern Shepherd," a rather overcrowded picture, but a good attempt. Third: (\$1.00) Oscar S. Marshall, Salem, Ill., "A Flower Parade." This picture was selected mainly on account of its perfect technical quality.

Next month we will announce a competition of peculiar interest, the details of which are not yet quite settled.



A MODERN SHEPHERD.

W. C. Webster.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1764. F. P. TOLLES.—“Soap Bubbles” is an example of perfect technique, or “straight photography” of the highest class, without any attempt at art, quality or evidence of thought. A little of the latter would have prevented the awkward position of the right arm, or perhaps put the pipe into the right instead of the left hand and so got rid of that difficulty, and either introduced a different background or made this less pronounced, its fine definition and scattered lights tending to take and keep the eye from the figure instead of, as it should, lead the eye to it.

indeed, is as nearly perfect as may be, but the subject is one of those that occasionally come in which the reflections on the water

Your photography could hardly be improved, and you should now, as we have more than once advised, turn your attention to the study of art.

1765. H. W. SCHONEWOLF.—“After Rain” is a snow scene in which the photography is very much better than the selection and arrangement. The technique,

are such as to make almost as good a picture upside down as in the right position, and in this case it is all the worse because of the dividing line between the land and the water being exactly in the middle of the print. Without the water, that is, the foreground, beginning near the tree on the left, you might have had a fine subject, especially with a trodden path so as to give it an indication of life, although it would have stood with advantage a little longer exposure and shorter development.

1766. CARL KREBS.—“February Shadows” is another snow scene far above the average that come to the Portfolio, although the subject is one that would hardly have been

chosen, except for the snow. Technically, indeed, so far as exposure and development is concerned, it may be said to be faultless,

carefully the articles on exposure in our January and February numbers, see "Answers." The enlargement is fairly good, but might have been sharper, and the pure white sky is a serious fault. Why not reduce the sky in the negative so as to give an indication of clouds. It is easy to reduce locally with Farmer's solution or the "Agfa" reducer.

1768. MAUD YOUNG.—"On the Stairway" is really a reproduction of a large stair on a few steps of which are placed two small figures; but from a much too short exposure they are blacker than ever were negroes, and, unless for a few streaks of

but from a pictorial point of view little or nothing can be said in its favor, there not being one object more important than another, and nothing but the snow that could have induced you to consider it worth a plate.

1767. F. SOLOMON.—"The Bend in the Road" is a good subject, but not from the best point of view. The house on the right and the pool on the left dividing the interest instead of either the one or the other concentrating it, and making, as it were, two objective points instead of one. The photography is good, although a longer exposure would have enabled you to get all

light, the stair is, if possible, blacker still. Surely you can see as well as we how unnaturally black everything is. Try again, placing the figures at least three steps lower and go near enough to make them a half or a third larger, and give three or four times the exposure.

the detail you have or that was needed without pushing development so far as to give the objectionable white sky. Read

1769. E. G. FOUNTAIN.—"Spring Ploughing," although a somewhat hackneyed subject, is excellent of its kind, the only fault a little too deep printing, from probably a

little too thin a negative. The composition and placing is faultless, although lighter printing would give a more satisfactory result, and it would probably be better still if the negative were slightly intensified.

1770. E. L. CHAMBERLAIN.—“Where the Frogs Sing” is an unsatisfactory print of an uninteresting subject. The print is flat and grey without either light or shade in the true sense of the words, and with no one object or point of greater interest than another. A foreground of water filled with

reflections of the trees and foliage behind; one of those subjects that in nature appear charming, but when photographed are little better than a waste of time and material. From a merely technical point of view the print suggests a too thin negative, that might have been improved by longer development, and that might still be improved by intensification. From the pictorial point of view there is too much squeezed into the small space; as, say, the middle third on this size of film and upright could have been made to yield a fairly fine picture.

SPRING PLOUGHING.

E. G. Fountain.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol Toga Centre, N. Y.

Camera Work, No. VIII, may be said to be a Hofmeister number, containing, as it does, six excellent examples of the work of those well-known German artists; although it includes also pictures by Demachy, Steichen, and Mary Devens.

The keynote to the work of the Hofmeisters is found in the following statement by Ernst Juhl, in an appreciative article in this number. “In their latest work, except ‘The Churchgoers’ and ‘Sea Calm’, the Hofmeisters have made no attempt to

copy nature, but have tried to accentuate the sentiment they were striving for by the use of some predominating color to which all others are subordinated, serving merely to bring the principal phase of the pictures into prominence." Some of them, we confess, to be beyond our ability to appreciate, but the fault is ours rather than theirs; but no one can study the "The Churchgoers" without being the better for it; and "The Solitary Horseman" may well form a text for many sermons. Demachy's "Behind the Scenes" is too well known to require a word in its favor, as, although an example of perfect simplicity, the oftener we go to it the better we like it and the more we see in it; while his "Speed," an automobile and nothing more, the personification of simplicity, is a never ending source of pleasure. Mary Devons' "The Ferry, Concarneau" touches one of our sunny memories of the long, long ago, and by so much shows its power, but we are altogether unable to find anything to admire in Steichen's "Sadakichi Hartmann."

The reading matter of this number is more than usually interesting. Hartmann writes interestingly on "The Solitary Horseman," Juhl tells of the Hofmeisters and their work, and Demachy gives some most valuable hints on the working of gum-bichromate; the two important factors in which, according to him, being the proper coating of the paper, that is, the proper thickness and evenness, and the proper length of exposure. Considering how long we have fought for the recognition of the necessity for the employment of lenses of sufficiently long focus, it will be easily understood how gladly we welcome the article on that subject by L. J. R. Holst, especially as he gives data that makes the subject beyond a doubt.

From an "Appeal," by the editor, we learn that an idea has got currency that the circulation of *Camera Work* was confined to a favored few, probably to the Photo-Session and their sympathizers, and we gladly take this opportunity of saying that nothing is further from the truth. *Camera*

Work is got up at an expense greater than is easily realized, and although the editor and proprietor is willing to put into it his very best, and only they that know him well know how very great that is, it can only live and continue to do its noble work through the support of a large subscription list. To every one, therefore, who has the advance of true pictorial photography at heart and who can spare the five dollars, we say, subscribe to *Camera Work* at once by sending the five dollars to Alfred Stieglitz, 1111 Madison avenue, New York, and you will never regret it.

* * *

THE PHOTO-MINIATURE, No. 60, with index for the V volume, deals with "Who Discovered Photography?" but, wisely enough, does not answer the question. It however gives enough to enable every one to answer it for himself, and according to what he considers photography. If a camera image is to be the starting point, then Talbot is, as we have always maintained, the Father, as not only was his process published about seven months before that of Daguerre, but while the latter is almost a forgotten quantity, the process of the present day is merely a modification of the former. The Photo-Miniature No. 60 is one of the most valuable communications on the history of photography that has as yet appeared, having gathered together in one volume information scattered through many.

* * *

THE PRACTICAL PHOTOGRAPHER, VOL. I., No. 1, is the first number of an American edition of the magazine under that title published in England, the American publishers being the Photo Era Publishing Co. of 170 Summer street, Boston, and we may say at once that it is a highly creditable production. We copy the following from the prospectus, adding that the number admirably bears out the claim.

"Each number treats of a certain definite branch of photography, and tells all that is known on the subject in a series of arti-

cles by the best authorities. In this way a fuller and more rounded view of the field is gained than any one point of view could give.

"The first number is a comprehensive treatise on 'Trimming, Mounting and Framing,' and treats these subjects in a broad and logical fashion. This question is of timely interest, and the number is the best practical guide to the solution of these difficult problems that has yet been placed before the public. In especial, the method of multiple mounting on papers is fully considered from both theoretical and practical standpoints, and directions given which will enable the novice to successfully practise this difficult art."

* * *

A PHOTOGRAPHIC TOUR WITH A CHANCE TO GET IT FREE.—From the *Photo Era* also comes a prospectus of a Photographic Tour conducted by one of its Associate Editors, and in conjunction with The Bureau of University Travel; starting on June 18th, from New York, and returning thereunto

on September 13th, and in the interval visiting almost everything that is worth seeing or photographing on the Continent of Europe, at a cost, including everything needed, of \$625. As an additional inducement the cost of the trip will be given as a prize for the best set of photographs of not less than 20 and not more than 100, taken during the excursion. All necessary information may be obtained by application to the *Photo Era* or The Bureau of University Travel, 201 Clarendon street, Boston.

* * *

First American Photographic Salon.

New Yorkers are showing a great interest in the First American Photographic Salon, to be held in that city next December. The jury is made up of painters of distinction and the committee in charge represents every corner of America. The personnel of the jury is strongest recognition of photography's standing with the fine arts and the honor of being accepted by it is a worthy incentive to pictorial workers. There can be no appeal from recognition by such a tribunal.

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

Cleveland Camera Club Exhibition.

The first annual members' exhibit of the Cleveland Camera Club opened April 25, at the Club's quarters 625 Caxton Building and will remain open to the public until May 15. The exhibition includes fifty-seven framed prints by fifteen members of the club, all kinds of printing processes being represented from gum to Solio. The Print Committee of the club, consisting of Messrs. Baker, Semon and Marvin, acted as the jury of selections and have succeeded in getting together a collection of prints which, considering that they represent the work of members of a club of but forty, are of a very high average of merit and

have aroused much favorable comment among the many visitors to the show. A. C. Bates is represented by three prints, the best of which is a well composed study of some men fishing on a dock.

F. C. Baker shows fourteen in all among them being "On the River," an evening effect, showing two tug boats, which was much admired, and which was honored by acceptance at the London Salon of 1903. Among Mr. Baker's other prints, "Hill Pasture" and "Winter" attracted attention; "October Woods" and "Shoveling Snow" by C. S. Bourgeoise were extremely good things and R. E. Brown's four prints deserve praise.

E. G. Fountain's "A Moment's Rest" and

H. F. Harvey's "Sugar Camp" made a pair similar in subject and of considerable merit.

Perhaps the best of W. F. Provo's seven prints, though all were good, was a ploughing picture in which the action of horses and man was exceedingly well suggested.

Carle Semon was far from being represented by his best work, though his picture of an aged couple, in platinum, was an example of strong, sound portraiture. The remainder of the exhibitions were represented by from one to four prints, many of them deserving of more extended notice than our space will permit.

* * *

Metropolitan Camera Club.

The Metropolitan Camera Club of New York is the only photographic organization in the world possessing a studio equipped with the new Cooper Hewitt electric light for portraiture. Full exposure is obtained in one-fifth second with portrait lens and exquisitely soft effects, with perfect blending of tones, are secured. The results are superior to work by any form of daylight and the advantage of making portraits at night, under the most favorable conditions, is of vital moment to members of a camera club.

* * *

Brooklyn Camera Club.

The spring exhibit of photographic prints of the Brooklyn Camera Club now hanging is noticeable on account of the degree of artistic merit displayed by the majority of the pictures shown. Of the 137 prints entered in the competition very few are of the commonplace variety, so very prevalent in the usual amateur exhibition. The character of the work may perhaps be best understood when it is stated that several hours were required by the judges on Monday evening to arrive at a conclusion for the several awards.

The jury of selection consisted of the following well known experts: Mrs. Gertrude Kasibier, prominent for her fine portraits;

Mr. Hugo Froelich, former art instructor at Pratt Institute, and Messrs. W. B. Colson and James W. Kent, of the Brooklyn Institute, both expert amateurs.

The president of the club, Mr. William T. Knox, and the chairman of the print committee, Mr. C. M. Shipman, are to be congratulated upon the signal success of the exhibit, while the contestants fortunate enough to secure an award may well feel proud of the victory, as the judges were most exacting, making but one award in the miscellaneous class, although three were asked for.

Awards were distributed as follows.

Awards—President's Cup, Won by W. H. Zerbe, Jr.; Vice-President's Cup, won by Jos. Bossardet.

Landscape—First award, blue ribbon and silver medal, won by E. O. Torbohm; second award, red ribbon, won by C. M. Shipman; honorable mention, white ribbon, won by E. O. Torbohm.

Genre—First award, blue ribbon and silver medal, won by W. H. Zerbe, Jr.; second award, red ribbon, won by W. T. Knox; honorable mention, white ribbon, won by W. H. Zerbe, Jr., C. M. Shipman, W. H. Zerbe, Jr.

Portrait—First award, blue ribbon and silver medal, won by W. H. Zerbe, Jr.; second award, red ribbon, won by Theo. Rebele; honorary mention, white ribbon, Chas. Geo. Haas.

Marine and Miscellaneous—First award, blue ribbon and silver medal, won by W. T. Knox.

Each first award carried with it a handsome silver medal. The president's cup, awarded for the best picture exhibited is a handsome silver prize carrying on its face the club medal in gold. The vice-president's cup, hardly less handsome was awarded for the best picture by o. e., not previously the winner of an award.

The collection will be on public view at the club rooms, 776 Manhattan Ave., on the evenings of Thursday, Friday and Saturday of this week, from 8 to 10 o'clock.

LETTERS TO THE EDITORS.

Steadman System of Timing Exposures.

EDITORS AMERICAN AMATEUR PHOTOGRAPHER:

Gentlemen: I hope that you may find space for the following explanation of certain points in my system of working which you evidently misunderstood, as indicated by your report of my talk at the New York Camera Club rooms on April 14th.

The following is quoted from the report as it appeared in your issue of May, p. 231: "The time factor he had adopted was 32 seconds, which was equal to one actino of intensity. That is to say, the tint solio paper would assume in 32 seconds' exposure to diffused daylight would be the standard tint or represent one actino of intensity.

A unit under such conditions would be impossible, as they are not fixed. "Diffused daylight" means nothing definite whatever,

The truth is as follows: The standard tint, which is the fixed labor that the light is set to do, is a tint on solio paper which becomes just plainly observable when looked at in contrast to the original color of the solio. The tint to be made through a hole cut in any thin opaque substance, such as the thin cover of an ordinary pocket note book.

The length of time that any certain light intensity requires to do this fixed amount of labor is called the "solio time" of that intensity, and 32 divided by the solio time of any intensity gives the value of that intensity in simple units. This is conveniently selected.

An intensity, therefore, whose solio time is 32 seconds is a one unit intensity, since 32 divided by 32 equals one. If the intensity is strong enough to do the labor in 16 seconds a two unit intensity prevails and 32 divided by 16 equals 2. If the standard tint is obtained in one second there exists a 32 unit intensity, as 32 divided by one equals 32, etc.

If, as in the summer, with the sun high

on a clear day, the solio time created at the surface of the solio paper is $\frac{1}{8}$ of a second, 32 divided by $\frac{1}{8}$ equals 256, the number of units of intensity of the surface lighted. If in an interior the solio time at a certain point is found to be 128 seconds, then 32 divided by 128 equals $\frac{1}{4}$, and $\frac{1}{4}$ of a unit of intensity prevails.

The "solio time" of an intensity becomes a fixed unit in itself as it represents the length of time under all varying conditions, in which each intensity will do a fixed amount of labor.

In the ordinary practice of photography as I have it simplified, it is unnecessary to consider the direct unit value of an intensity, but rather its "solio time," which is inverse to that value and in harmony with the working speed of the light or the exposure.

If one were always photographing people of average complexion with the same emulsion, exposure could be controlled absolutely by simply finding the diaphragm once for all, with which the solio time of the intensity at the head would create, when used as the exposure, the desired effect in the latent image. In using Eastman film and photographing such a subject and giving the solio time of the light at the head as the exposure, it was found that diaphragm 16 gave a normal exposure. Diaphragm 16 then becomes in a fixed manner, for that emulsion, the "solio time diaphragm" or "solio diaphragm" of that particular subject, and in photographing that kind of subject the solio time of the light, given as the exposure, be in one second or 32 seconds, will always give a like effect in the latent image if that diaphragm is used.

But suppose that the subject has a very light complexion, then to create the same effect in the latent image on the sensitized film, the time of exposure, i. e., one half the solio time of the light might be given. But instead of resorting to this and to preserve the solio time of the light as a simple basic

exposure it is possible to obtain the same effect in the latent image by reducing the solio diaphragm of that particular subject, (a portrait of a very light complexioned person), to one half the area, or diaphragm 32.

If a bird's eye snow view or a marine be photographed, giving the solio time of the light as the exposure, it will be found that the diaphragm which will give the correct effect in the latent image is number 256, and that becomes the solio diaphragm for that particular subject.

The extreme simplicity of my system is illustrated by the following simple sentence: "The solio time of the light is the exposure with the solio diaphragm of the subject."

I have arranged the subjects of nature as usually encountered in a table with the solio diaphragm of each subject placed after it. This table is for the Eastman film and emulsions of like speed:

	U. S. Diaphragms
PORTRAITS	
Very Light Complexion.....	32
Average.....	16
Very Dark.....	8
ROOM INTERIORS	
White Walls.....	64
Average Walls.....	32
Very Dark Walls.....	16
Dark Machinery.....	8
REGULAR EXTERIORS	
Bird's Eye Class.....	128
White Objects in middle distance	128
Average " " " " " "	64
White " " in Foreground...	64
Average " " " " " "	32
Green Trees Abounding.....	32
MARINE AND SNOW VIEWS	
Bird's Eye Class.....	256
Objects in Middle Distance.....	128
Objects in Foreground.....	64
BUILDINGS	
White.....	128
Average Color.....	64
Very Dark as Red Brick, Etc....	32

In using the system take the solio time of the subject by holding the solio at the position of the brightest part of the subject and turning it toward the brightest light source. The solio time as measured is the exposure with the solio diaphragm of the subject that is being photographed.

If it is desired to use some other diaphragm simply halve the exposure or the solio time, for each whole number that the diaphragm is opened, or double it for each number that it is closed beyond the solio diaphragm mentioned in the table.

Or note what relation the exposure bears to the solio diaphragm and with any diaphragm (provided the U. S. system be used), the exposure will bear the same relation: As follows: Suppose that in photographing a person of normal complexion the solio time of the light is found to be eight seconds. The solio diaphragm of that subject is U. S. 16 and the exposure therefore is one-half of the number of the diaphragm. And consequently one-half of any diaphragm number will be the exposure with that diaphragm.

On account of the great latitude of the photographic emulsions the solio time of a light intensity may be one of the following scale:

$\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2, 4, 8, 16, 32 seconds, 1, 2, 4, 8, etc.

In measuring the light, give the exposure to the solio that it is thought will create a visible tint and if it becomes visible then slip the solio strip along to a fresh place and give one-half of the former time, and if still visible, repeat with one-half of that time until the smallest time is found that will create a just plainly observable tint. That time will be the solio time at the position where the solio was held, and the exposure with the diaphragm opposite the subject being photographed.

Of course, if the first estimated time does not create the tint, then give as much more and so on, doubling the total time at each exposure until the tint becomes just visible.

Another error in the report is the statement that my opinion as to the latitude of emulsions, referred to possible over and under-exposure. Such is not the case. What I claim is that a subject may have its brightest part from 30 to 40 times as intense as its darkest part and still the emulsion will render the texture of the highest values and the detail of the lowest. This

with a nearly maximum exposure for the emulsion used and with a normal developer and a normal development as to contrast, to agree with the tone giving properties of the paper or medium used in the production of the photograph from that negative.

The reference is to the contrast capacity of emulsions or their capacity to render texture and detail from high and low values in the same subject.

I have given a somewhat complete ex-

planation of the system as your readers may be interested in reading same.

Yours sincerely,

FRANK M. STEADMAN.

P. S.—If the plate and film makers would print this simple subject table and place it in every box of plates and roll of films, the table being corrected as to the solio diaphragm of the subjects for each speed of emulsion the question of exposure would be settled.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

F. SOLOMON.—By sending your subscription direct to the publishers, at 361 Broadway, New York, you will get the magazine as soon as the mail can carry it after publication.

Mounting Prints with the Gloss.

CLAUDE GRINDLE.—The "answer" to which you refer got into the magazine without our knowledge and during our absence from home. You cannot mount prints made glossy by squeezing on ferrotype plate so as to retain the gloss with an ordinary mountant except by pasting them only round the edges; and for that purpose a narrow line of thin glue or gelatine is better than paste or starch.

The cause of your prints refusing to leave the ferrotype plate when dry was probably that they were too much soaked with water when squeegeed on. The better way is to let them thoroughly dry from the washing water and, just before squeegeeing, immerse them again until quite limp.

Developing Rapid Exposures.

J. P. KURSTIMER.—The development of exposures by a focal-plane shutter is not in any way different from that of exposures by other shutters or by the cap. In dealing with exposures of 1-1000 of a second even with an aperture of f-6.8 on a well lighted landscape we should not be in the least surprised that you do not get a trace of an

image, the probability being that the light was not sufficient to overcome the inertia of the sensitive salt in the film.

We know of no pamphlet dealing with the development of such short exposures, but if with "a good standard pyro developer" you do not get a trace of an image you may be quite sure that the exposure has been too short. To show that you are not alone in your difficulty we clip the following from one of our British exchanges. "Will you, please, tell me the best formula and best method of developing plates exposed by a focal plane shutter at 1-1000 of a second? I use for ordinary work pyro ammonia." In reply: Any developer. What has the form of the shutter to do with the developer, supposing the plate is fairly well exposed. If it is very much under-exposed, and probably that is what you anticipate, metol or rodinal will, perhaps, bring out as much detail as any developer."

Are you sure that the shutter was operating properly? You had better watch for the flash on the ground glass while snapping. We have heard of the slipping of the spring and consequent closing of the slit.

Edinol Developer.

C. W. ROMANS.—Edinol, in its method of using is not different from other developers of the same kind, and the formulae given by the makers answers admirably with a developing factor of about 18, more or less, of course, depending on the kind

of negative required. Personally, we prefer either of the formulae in our January number. That on page 26, or that on page 48; the latter with 10 instead of 40 ounces of water. Either may be made up in separate solutions but we find it keeps as long as we want it all together.

Photography as a Profession.

CHAS. SCHWIERING.—(1) No license is required by a professional photographer either in the United States or Canada for outdoor work, such as photographing houses, groups or portraits for sale, either to order or on speculation. (2) We know of no book treating on the kind of work; but it may say that generally speaking good, clean, sharp photographs are more likely to find a ready market than such as are considered to belong to the Salonesque class. (3) As to the "chance of at least a livelihood" in such a business, that altogether depends on yourself. If the right kind of man, and you can do the right kind of work, there is no doubt about it. You can do that and very much more. (4) The way to set about it also depends on yourself, one style of man doing better in one way than another. If we were to go in for that kind of work we should, having fixed on a locality, make the best picture that we could of one of the best houses with its surroundings; and taking that as a sample, go from home to home trying to secure orders.

A Copyright Question.

R. W. S.—Although you sold to A the right to make post cards from your uncopyrighted photograph you cannot prevent B from also making them from a print from the same negative that he bought in the open market. In point of fact, you sold to A what did not belong to you, and as you cannot protect him in what he believed he was paying for—the sole right to the picture, to be strictly honest you should return the money. We are not sufficiently acquainted with the copyright law to say whether by copyrighting the print now you could prevent B from making further sales.

Supplementary Lenses.

ALEXIUS.—No, the writer of the letter referred to is not the "inventor and first manufacturer of supplementary lenses." We and others employed them thirty years ago, Taylor in his "The Optics of Photography" describes and illustrates them under the name of focus adjusters, and they were articles of commerce long before the gentlemen in question began, according to his own account, to make them. All that they do, no matter under what name they may be sold, is to either shorten or lengthen the focus of the lens to which they are applied.

Old Style Lens.

T. L. WATSON.—From your description the old lens seems to be what was at one time much used and known as the "Globe," a wide angle lens made by Harrison of New York. As made in the spherical form they, or most of them, gave a flare spot or, as it was called, a ghost, and according to Taylor, it did not seem to have occurred to its maker that when the lenses were placed a little closer together the flare disappeared. They are now obsolete, so that the commercial value of your find is very small. We were at one time the owner of one, and the only fault we found with it was that the lenses protruded beyond the mount at both ends so that it could be laid only on its side. As we remember, it did its work very well, but required to be well stopped down.

The Retoucher's Art.

(Miss) F. L. M.—Of the two the untouched print is very much the better, the face of the other is retouched altogether too much, the skin being as smooth and textureless as a billiard ball. Unless you learn to do better your chance of employment is small. Try to learn something of the anatomy of the face and if possible get a few lessons from a good retoucher and then you may succeed in finding a place. The salary will depend on the quality of the work, that is, the better the work you can do the higher the class of studio that will employ you

COMRADES.
Copyright, 1903.

Henry Hall.
Salon Club of America.

THE
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A PHOTOGRAPHIC GRADER.

WHAT is a photographic Grader? It is an appliance by which, in a bromide enlargement, the range of gradation may be increased from 1 to 16, its natural degree, to from 1 to 256; something about the gradation of a carbon image.

According to Howard Farmer of "Farmer's Reducer" fame, the scale of gradation from white to black on bromide paper is as one to sixteen, and in enlarging on it from a negative with greater range, and just in proportion to the steepness of the range, either the upper or the lower end must be sacrificed, the end depending on the exposure.

To overcome this difficulty was the object of the grader brought before a meeting of the Royal Photographic Society by Howard Farmer in a lecture on "Progress in Enlarging." The grader is practically a screen; but so named to prevent confusion, the more

obvious title having been already given to several photographic appliances: a sheet or plate of glass with something like 17,500 clear dots to the square inch on an opaque ground.

The grader is placed in contact with the bromide paper and the enlargement made by projection in the ordinary way, the result being to break up the image into a fine stipple less objectionable than the finest lines in a half-tone print. The grader may be placed either glass or film side to the paper, according to the effect desired, and in that way a negative with a range of one to 256 may be perfectly reproduced.

The grader, he said, was produced by placing an ordinary dry plate in close contact with a half-tone process screen with 133 lines to the inch, in the camera and exposing through a very small stop. The plate on development showed a covering of minute

dots on a clear ground; which, when exposed in contact with another plate and developed, gave the desired grader with an equal multitude of clear dots on an opaque ground. But a half-tone screen, especially of a size sufficient for average enlargements, is an expensive article; far beyond the purse of most amateurs and indeed of many professionals; and if graders are to come into general use they must become articles of commerce. And it will be with this as with most other things, the demand will bring the supply. But there must be knowledge of their value before the demand can

come, and without that knowledge it is hardly to be expected that any one will go to such an outlay on the mere chance of its being a success.

It rests then with one or more of the few who are in possession of such screens to place on the market a sufficient number to give the grader a fair trial, and failing them to whose business such manufacture may be too foreign; why should not Levy, pre-eminent in screen making, take up the matter, and place on the market at a reasonable price a sufficient number to set the ball a-rolling?

THE TRINITY OF TECHNIQUE.—IV

Backing.—Continued.

BY DR. JOHN NICOL.

TAKING it for granted that I have said enough to show the advantage of backing plates, the next question is as to the best way of applying it. And it may be said at once that there is no necessity for having it smooth as in painting a surface, it may be as rough as whiting applied by the window cleaner so long as the reflecting surface is destroyed.

And first, as to the Bayer varnish mentioned in my last or other backing in liquid form: It may be laid on with a brush, but a much better plan is to pour it on and off as in the wet collodion process. Plates of any size up to whole-plate may be taken between

the index finger and thumb of the left hand by the near left corner, and brought to the level. Then, with the bottle in the right hand, pour a pool in the centre, a little practice will soon show how much, and by a gentle inclination of the plate cause it to flow, first to the near left corner, and then to the far left, to the far right, and to the near right, and at the same time so tilting the plate as to cause the surplus to go back into the bottle. Simultaneously with the last tilting the plates should be gently rocked so as to prevent the varnish running in streaks, and when near the last drop the plate should be returned to the

level until set, and then reared up to dry, which will be in a few minutes.

Varnish made with alcohol and ether or other volatile liquids will naturally get thick after a few pourings and

the simplest and most efficient of methods, especially when it comes to the removing of the backing; all that is necessary being to immerse the plate in water or the developing solution

CHURCH INTERIOR
BRITTANY.

Walter Zimmermann.

may be thinned with the liquids with which they were prepared. It may take a little practice to coat by thus pouring on, but when the knack is once acquired it will be found one of

when it comes off in a sheet or film, practically of its own accord, and without injuriously affecting the developing solution.

But backing about the consistence of

ordinary paint has, hitherto at least, been in more general use, and it may be applied either by brush, sponge or piece of cloth. The plates are generally held in the left hand and the backing smeared all over without attempt at more than the destruction of the reflecting surface, and the messiness of that method more than anything else has prevented backing from being so generally used as it should be.

About thirty years ago, when I had something to do with backing on a commercial scale that messiness induced me to devise a method by which it could be obviated and I have employed it ever since. It is the employment of a backing frame constructed as follows. A board two inches and a half each way larger than the plate to be backed, nine and a half by seven and a half for a seven by five; of three quarter wood and cross ended to prevent warping, is covered with any smooth surface cloth, without pile for the more easily removal of dust. On the four sides of this is glued or screwed strips of veneer a little less than an inch and a quarter wide so as to make a frame in which to lay the plate; and hinged to one of the longer sides in any convenient way is a frame of stout tin plate or zinc the outside of which is the size of the board and the opening just a little less than the size of the plate. Lastly, to the side on which are the hinges of the frame is fastened a piece of ribbon a few inches longer than the breadth of the board, for the lifting of the plate after backing. From the description

the method of using will be abundantly evident. The frame is lifted and the ribbon seen to be lying flat across the board; the plate placed, face down, in the frame made by the veneer and the hinged frame closed and held down by the left hand while with the right the backing is applied by a few rapid circular motions with brush swab or piece of cloth; I prefer a piece of sponge tied to the end of a stick. In this way, with a fairly rapid drying backing, a gross of plates may be coated dried and repacked into their boxes in the course of an evening without soiling the fingers.

Simpler perhaps than either of these methods is one apparently coming into frequent use, the squeegeeing of a suitably prepared paper on to the back of the plate. Just how far this may be successful depends entirely on the perfection of the optical contact that may be secured; and as that depends on the paper being coated with something that does not completely dry, it would hardly be safe to repack plates with a moist backing. Such papers, however, would, for temporary purposes, be of considerable value, and therefore I intend to look into the question somewhat exhaustively in the hope of finding something that while keeping sufficiently moist to be easily squeegeed into optical contact will have none of the faults hitherto found with them. In the meantime, I would suggest to those having time and inclination to experiment that success is likely to be found in a suitable mixture of gelatine and glycerine.

RAVVY and CADDY.

Curtis Bell,
Salon Club of America.

THE SALON CLUB AND THE FIRST AMERICAN PHOTOGRAPHIC SALON AT NEW YORK.

BY SADAKICHI HARTMAN.

ABOUT two years ago two solitary pictorial workers in the middle West—the one Louis Fleckenstein, of Faribault, Minn., and the other Carl Rau, of La Crosse, Wis.—discussed the advisability of forming some kind of organization, which would encourage the younger generation of pictorialists. Everywhere new talents were cropping up, but finding it somehow difficult to assert themselves and to gain the recognition they considered due to their efforts, they felt rather discouraged and disillusioned.

The two camera artists mentioned above realized the situation, and after carefully amassing the opinions of pictorialists throughout the country (west of the Mississippi River) came to the conclusion that it was time to make a move of some sort to bring the younger generation of pictorialists to the front. The result was the Salon Club of America, which was quietly organized in December, 1903, by eleven pictorialists whose work had successfully passed the Salon juries of recent exhibitions at Philadelphia and Chicago, namely, Mrs. Jeanne E. Bennett, Louis Fleckenstein, Walter Zimmerman of Philadelphia, Curtis Bell, Carl Rau, W. G. Corthell of Wollaston, Mass., J. W. Schuler of Akron, Ohio, Ralph E. Berger of Reading, Pa., J. H. Field of Berlin, Wis., the Parrish

sisters of St. Louis, and Herbert A. Hess of Crawfordsville, Ind. Since then Carl Bjorncrantz, Nellie Coutant, Zaida Ben Yousuf, Adolph Petzold and Henry Hall, and (just as we are going to press) the two Washingtonians, C. H. Claudy and C. E. Fairman, have joined the ranks of this enthusiastic little guild of camera workers.

The trend of their work can perhaps be best judged from their monthly portfolio. This portfolio idea is a very good one, as it keeps the various members, residing all over the country, in continual touch with each other. It is carried out in this fashion. Each member prepares several mounted prints monthly and writes a brief description of them for insertion in a monthly portfolio, which is forwarded by the Director, with a list of members, according to the most convenient route for making the circuit quickly. Each member receiving the portfolio writes a criticism for mutual advantage and instruction on the blank accompanying each print, and forwards it to the next member.

I had the opportunity to see one of these portfolios at Miss Ben Yousuf's studio.

The work is very promising. It is not yet exactly what the French call *arrivé*. The majority of the Salon Club members is still experimenting and

THE BIRD'S NEST.

Jeanne E. Bennett.
Salon Club of America.

searching for a manner of expression, in which the characteristic qualities of photography may be most perfectly exhibited—and, I hope, its limitations most loyally respected. Nearly all seem to be possessed by a clear idea of the things they want to say. Many of their prints show strong and individual workmanship, while others still lack that technical finish which

apparently never tires of depicting little hooded girls, at the ferry, fetching water at the brook, roaming through the fields, or busy with some domestic occupation in old-fashioned interiors. Her work is at times wonderfully vital, and always subtle and delicate. Each of her pictures has a meaning, and is handled with beautiful skill and rare artistic feeling.

A NORMANDY COURTYARD.

Walter Zimmerman,
Salon Club of America.

we have become accustomed to in photographic prints. Their range of subjects is a very wide one, and they are particularly strong in landscape work.

The four most accomplished members of the Salon Club are Jeanne E. Bennett, Walter Zimmerman, Curtis Bell and Adolph Petzold.

Like most of the Salon Club workers Jeanne E. Bennett is a newcomer. Her special realm is Brittany, and she

In seriousness of work Walter Zimmerman can not easily be surpassed. He has rarely been seen in print, but his work is easily remembered, since all that he does shows the thoughtfulness of the artist whose work represents the pictorial as well as the photographic quality. He has contributed but little to current exhibitions, but whatever he has shown publicly is powerful, studied and note-

THE YOUNG MADONNA.

Wendell G. Corthell.
Salon Club of America.

worthy. His "Church Interior—Brittany" is an admirable piece of work, in which difficulties that would stagger even the most accomplished of pictorialists have been successfully subdued and mastered.

Curtis Bell is a very versatile talent. He is equally efficient in popular genre like his "Ravvy and Caddy," in children portraits—his "As Big as Mama" is one of the best I have ever seen—and in landscapes, in which he effects a simple, quiet style. Pictures like his "Coming Storm" and "A Boyhood Memory" (the picture of an old country fence) hold their own in the best of company. His "Boat House" shows what can be done with material essentially modern and supposedly unpicturesque.

Among our American landscape photographers Curtis Bell, Adolph Petzold and J. H. Field occupy a unique position. They do not believe that it is the duty of a landscapist to see everything according to decorative formulae. They have the faculty of disengaging the practical significance of the commonplace object and fact. Curtis Bell sees everything in a minute pictorial way, as some American landscape painters interpret nature. Petzold's early work was also careful and elaborate, but he has gradually made his way to far greater simplicity and far greater power. The massiveness of his "Winter Twilight" is characteristic of his most individual mood of working. J. H. Field is less direct and bold, his strength is nervous, delicate and refined. He sees nature with the eyes of a lyrical poet.

The products of the two founders of this organization are of very original sort. Louis Fleckenstein is as versatile as Curtis Bell, his popular genre pictures are rather weak and commonplace, but his landscapes and interpretations of children are worthy of all attention. His capricious, piquant and virile imagination, as displayed in his "Song and Danseuse" and "The Pastoral" is unique in our photographic art. Who would ever think of depicting a little girl in a chase attitude, with the frivolity of a Boldini. It may be a trifle morbid, but what of that, as it is at least original and of excellent workmanship. Make any kind of picture you like, my dear pictorialists, so long as they be beautiful pictures.

Carl Rau has an individuality in a field of work which is little cultivated. He tries his talents in symbolistic genre. His themes are very ambitious—in his "Mill" his art even assumes epic proportion—but his technical or rather his pictorial skill does not always prove sufficient to carry out the idea. In his "At St. Mary's" he wished to convey "not so much a picture of a Catholic form of worship, but rather a symbol of peace, of rest, away from the busy world." A praiseworthy task, but does the picture really give us the impression of peace? I fear not—but I may say so much that even when Rau puts in his work, it still remains interesting. His studies of old men's heads, on the other hand, leave me rather indifferent.

The Parrish sisters of St. Louis are newcomers in the literal sense of the word. They are, I have heard, hardly

AT ST. MARY'S.

Carl Rau,
Salon Club of America.

more than two years at it. Their work still bears the earmarks of dilettantism. Their "Sleepy Girl," however, shows decided talent. One might say of it—for it is pleasant at times to drive a tandem of three adjectives—that it is brilliant, ambitious, eloquent and melodramatic. The Parrish sisters are no doubt young ladies *plein d'avenir*. I expect a great deal of them. But at present were it not that they were young, their prints would not interest one very much. I should have glanced them over in the mood of Heine's hero who cried thrice "Tirily" and having tirilied, spun around on his heel and went his way. The day will come however, when I will have to pay full

Ralph E. Berger.

THE PATH.

homage to their impeccable mastery of art.

The works of Nellie Coutant, the 'little wooden shoe' pictorialist, of Zaida Ben Yusuf, whom I have always considered our leading portraitist on semi-artistic lines, and of Herbert Arthur Hess, our American "von Gloeden" are too well known to be specially discussed. Also Carl Bjorncrantz, an excellent young worker; Ralph E. Berger, particularly fond of flat tone interpretations; J. W. Schuler, a clever landscape worker; Geo. Donchower, C. H. Claudy and C. E. Fairman have done and do interesting things, but whom the lack of space at this occasion must deprive of further comment.

Two pictorialists, however, who can not be omitted from the briefest sketch are Henry Hall and W. S. Corthell. Hall seems to have made a specialty

SELF PORTRAIT.

C. Bjorncrantz,
Salon Club of America.

of child life. He represents really a marvelous amount of individuality in each of his little men and women. His "Rough and Ready" is a masterpiece. My friends Albert L. Groll, the landscape painter, and Roland Rood, a critic of many moods and modes of thought, both agreed that "it was the best in the whole bunch." Corthell undertakes to lend to each of his

make their debut before a New York audience at the First American Photographic Salon.

This exhibition will be a memorable one in many respects. Let us glance over the prospectus to learn more about it.

In it we read that the management of the First American Salon at New York City cordially invites the co-

WINTER TWILIGHT.

prints an air of refinement, which alone lifts his work far above the mediocrity of these scores of busy little pictorialists who tinker values and solder tonalities and thereby consider themselves great artists.

Well, in December we will find out what stuff they are really made of, for then the Salon Club workers will

Adolph Petzold.
Salon Club of America.

operation of all artistic photographers in America and throughout the world, that it is the First Photographic Salon to be given in the Metropolis, and the first of national scope under the control of a committee from all sections of the United States, that consequently an exhibition of the highest order is expected. There will

submitted. (A list of excellent names is furnished. I know them all personally and by reputation, but how many of them will actually serve?); that "only those photographs which give distinct evidence of artistic feeling in subject and execution will be accepted"; and that "all amateur and professional photographers throughout the world are requested to forward work of the character described," and that "there will be no invited work, and all prints forwarded will be examined by the jury."

I may add that the same exhibit will, later on, be shown at the Chicago Art Institute, the Corcoran Art Gallery, Washington, and the Boston Museum of Fine Arts.

All this sounds like open revolt! But far from being lawless, it is mere-

Annie W. Brigman
PORTRAIT OF HARRY COWELL.

be no favors to any and no discrimination against any. All work whether from the famous or the comparatively unknown artist, will be exhibited equally, and the jury will not know the names of contributors until after the selection has been made.

No one "school" or "fad" will command precedence. The standard of judging will be the artistic quality of each print submitted.

On the page of "Conditions" we are furthermore instructed that the jury is composed of artists, who have been requested to act as judges of the artistic character of the work to be

Misses W. & O. Parrish.
TURN IN THE ROAD.

ly the expression of new laws. For each generation there is a different standard. Old forms and old perfections wither. Out of the old symbols the color fades day by day, and it is the younger generation's business to create new ones.

It nevertheless sounds like an open revolt. And there may be an oppo-

sition! A duel between Messrs Alfred Stieglitz and Curtis Bell would prove indeed a great attraction. There are none upon whose swordsmanship I trust more surely upon than that of these two gentlemen. It will stir up the stagnant waters of pictorial photography—they surely need it—and make us all more happy at the end.

ENLARGING NEGATIVES BY ONE OPERATION.

THE making of large negatives from small ones is now so easy and so certain that few care to take to the field anything in the shape of an outfit larger than 4x5, and in Great Britain more generally 3¼x4¼. Hitherto we have recommended the roundabout method of first making

a positive, either by contact printing on carbon tissue, and from that making the enlarged negative in the camera, or the making of an enlarged positive in the camera, doing the necessary retouching on it, and then making the prints from it on carbon by contact. Excellent results may be made by

either method, but we have recently seen a series of enlargements almost if not altogether as good by an older and simpler one, so old as to be almost forgotten. We may say that over thirty years ago we tried the method in competition with the then popular solar camera, but not with sufficient success to warrant its adoption; although in the clearer light of to-day we have made a few that could not be distinguished from the best made by the more roundabout method.

Briefly, the method consists in securing a negative as nearly perfect as may be; one that by sufficient exposure and suitable development has the widest possible range of gradation yet without clear glass or true opacity in any part unless there has been in the subject the highest of high light and the deepest dark or perfect blackness. This is focussed to the desired size in the enlarging camera or in any camera of suitable size, the negative being supported, say, at a window in any of the well known ways, and the exposure made on, preferably, a slow plate, as for a transparency, but considerably longer; long enough for the image to appear almost immediately on the application of the developer, and the development continued till the image shows well on the back.

The over developed enlarged positive is then well washed and transferred to a dish containing a "bleaching" solution made as follows:

Water, 20 ounces,
Potassium bichromate, 60 grains,

Nitric acid (chemically pure),
30 minims,

and allowed to remain till the bleaching is complete and the plate is as free from the appearance of an image as before development. It is again well washed, and rehalogenised by immersion in the following solution:

Water, 20 ounces,
Ammonia (stronger solution)
120 minims,

Ammonium bromide, 180 grains

In this it should remain for from three to five minutes, the dish being rocked the while; and then again well washed. The operations thus far should be conducted in the dark room, and the plate should now be re-exposed to ordinary daylight for from one to three seconds, depending apparently on its original sensitiveness; and then returned to the dark room and redeveloped; when, if everything has gone well, the result will be a first-class negative, in every respect as good as if taken direct.

In both cases we employed ferrous oxalate as the developer, partly because the results that induced us to have recourse to the old old method had been so developed, and partly because we had a stock on hand usually employed in blackening after mercurial bleaching, but have no reason to think that any of the more modern developers would not answer the purpose as well. We may return to the subject again, but in the meantime may say that the method is well worth a trial by all who prefer large to small pictures.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

Recognition of Camaraderie.—During the recent visit of the King and Queen of Great Britain to Ireland, and while on their way to the Trappist at a reception in the Womens' building at the St. Louis Fair recently, it is reported that she noticed an amateur photographer aiming to take a snap

EVENING DEVOTION.

Carl Rau,
Salon Club of America.

Monastery on Mount Milleray, several amateur photographers were noticed taking snap shots at Her Majesty who, instead of trying to foil them as some of lesser note are inclined to do, laughingly turned her camera on them. The daughter of our President takes a different course. As guest of honor

shot at her, and on her complaint to the chief of the hostesses she had him turned out of the grounds.

* * *

Here is good news, all the way from India, too, and from an M. D. at that. Frederick Pearse, M. D., F. R. C. S. Doctor of Medicine and Fellow of the

Royal College of Surgeons, all of which should prevent any doubting Thomases from having a doubt on the subject. And the news is that a batch of prints may be perfectly washed in "about five minutes, certainly within ten minutes"; and that "perfectly" is not too strong is proved by the fact that he has kept prints so washed long enough to satisfy himself as to their keeping without the slightest appearance of fading.

The prints are washed in a weak solution of potassium permanganate instead of pure water, so weak as to be only faintly tinted, less, in fact, than a grain to an Imperial pint. But they must not be placed in a tray and allowed to lie there, but washed in a stream of water from a pitcher or otherwise: and as soon as the water, or rather the solution runs from the prints with the color undischarged they are free from hypo and need only a rinse in pure water to be ready to hang up to dry. A capital idea surely, *if it works*, as not only does the solution remove every trace of the much abused hypo, but at the same time tells when the removal is complete.

* * *

What is the trade coming to? Not only have assistants in the photographic business to compete with self-taught amateurs, but, in Scotland at least—and it is said that Scotchmen wander all over the world, with "jail-birds." This I gather from the recent report of the Prison Commissioners for Scotland in which they say that "the teaching of photography has

been attended with the best results." When, I think some time in the sixties, I was consulted, and as a result assisted in establishing a photographic department in the Edinburgh Prison I little thought that it was ultimately to be turned into a training school for photographers; but a certificate of such an apprenticeship is hardly likely to be presented, however favorable; and where there is a desire for reformation it is to be hoped that ability, and not where it was acquired will be satisfactory. Workmen generally do not care to work with jail-birds, but where it is not known no harm is done.

* * *

I suppose doctors will always continue to differ but one could hardly expect such difference of opinion as to the proper length of lens for a quarter plate camera as is found in a recent number of this journal's namesake across the water. One correspondent says, "An anastigmatic lens for a quarter plate hand camera should evidently not be of more than $4\frac{1}{2}$ to 5 inches focus," and he adds (and in the addition there is a clue to the caliber of the writer), "I think he would do better by purchasing a good rapid rectilinear lens by a maker of repute, rather than to obtain a *cheap lens of the anastigmatic type*." The italics are mine, inserted because I have never yet heard of such lenses being cheap. The other writer speaks with greater authority because he gives proof for his faith in the shape of photographs, one by just the lens recommended the other by a lens of ten inches, and there

can be no two opinions as to the advantage of the longer lens. He says: "The largest view-angle that coincides with the natural view-angle of the human eye, and represents things as we see them, is one of 20° . But for practical purposes, we will find that a lens embracing an angle of 23° —a 10 in. lens on a quarter-plate—gives a satisfactory and natural perspective; and a longer focal length increases the difficulties of securing depths of focus. This has been conclusively proved by Mr. Welborne Piper in *The Amateur Photographer* of October 9th, 1902: Mr. Horsley Hinton advises a similar focal length in his "Pictorial Photography"; Mr. Storey, A. R. A., recently advised the use of the same view angle and such lenses are used by men like Spitzer and the Hofmeisters. But the use of a 10 in. lens, besides giving a more artistic perspective than the conventional 5 in. "quarter-plate lens," enables the photographer to stand twice as far away from his subject as the user of the 5 in. lens, and he is able to secure his groups and individuals free from self-consciousness—when the subject is a group of fisher lads, this advantage can be fully appreciated."

Readers of this magazine will have no doubt as to which of these opinions the editors will homologate, and if they could see the two illustrations which accompany and enforce that of the long focus advocate they would never, when it could be avoided, use a lens so as to make it include an angle greater than 25° .

It is sometimes profitable to contrast the old times with the new, and with that end in view I frequently dabble into the pages of the photographic literature of other days. Opening the *American Annual of Photography* for 1887 at random, the first thing that caught my eye was an article on "Common Errors in Photographic Practice" by David Cooper who will be remembered by those who at that period were "in the swim" as a recognized expert and a genial fellow who nevertheless held very strong opinions of his own. Amongst a long string of what he believed to be errors many of which are now considered essentials, not the least surprising is his opinion regarding pyro as a developer. "Error Ninth is to suppose that pyro is a better developer than oxalate of iron." He says, "I am satisfied that the prejudice in favor of alkaline pyro as a developer as against oxalate of iron, is largely imaginary or the result of careless manipulation with the latter. The prevailing impression that with it there is greater latitude in development, I have satisfied myself is an error of the 'first magnitude,' and one that can be easily proved by actual practice. I have cultivated the acquaintance of both long enough to warrant me in saying positively that the only excuse for preferring pyro to iron is that it is cheaper and more portable." What have those, and their number is legion, who take pyro as the standard by which all other developers are compared, to say to that? I doubt whether in all this great country during the last decade there has been a single

negative developed with ferrous oxalate.

* * *

The Photographer's Millennium through organization is once more on the carpet and this time friend Todd is the moving spirit. If any man can overcome the photographers' inertia he will; but even if he gets thus far, *cui bono?* Although, at the Illinois State Convention, he talked glibly of the "trades unions" of doctors, dentists, preachers and lawyers, and he might have included pharmacutists, both he and his audience knew or ought to know that the Powers that be will never be induced, by organization or indeed anything else, to put photography in line with law and medicine to the extent of giving to any number of its practitioners the right to say that any other number shall or shall not hang out their shingle or to be employed by one who does. That being so, the sooner the photographer realizes the fact that he must rely on himself the better. It is and always will be, as Todd himself says, "A free for all occupation;" a trade, where a business is run by an employer of any number of assistants, and a profession,

where the "One Man" method is adopted. Being "free for all" and an acquaintance with its practice, after a fashion, easily acquired; and requiring less capital than any other business yielding the same returns, it will, as friend Todd says, always be "a refuge for the destitute" and its practitioners always subjected to undue competition.

Why do I say all this? Not to dissuade from organization, although the word, from its connection with certain phases of trades unions has acquired a nasty flavor, but to advise against fighting with windmills, against leaning on a broken reed or wasting time trusting to what can never come to pass. In spite of all that makes the adoption of photography as a means of earning a living easy and that will always keep its ranks overflowing, there will always be work for those that by good work deserve it. But the photographer must *work out his own salvation*. The elevation of the status and the climbing of the ladder to a height at which he is beyond the influence of competition must come from within, not from without; and in spite of all that has or can be said there is always room on the upper rungs.

NOTES

A NEW METHOD OF DISSOLVING GOLD.—In the long, long ago we made considerable quantities of gold chloride by suspending Gilders' "squings" in water and passing through it a stream of chlorine; and that, and the ordinary way of dissolving it in aqua

regia, were, so far as we know, the only methods known until we came across the following paragraph in a contemporary a few days ago. It is worth a trial by those who still continue to make their own toning material.

MOTHERHOOD.

Annie W. Briggsman.
Salon Club of America.

plate makers there are still some who, for various purposes, continue to color sensitise for themselves by dipping. According to Herr Valenta, the following gives an excellent panchromatic plate, and is of course, equally suited for films although they are more difficult to manage, that is, more difficult to handle in the orthochromatising.

Ethyl violet solution, 1:5,000, 100 c. c.

Erythrosine solution, 1:500, 20 c. c.

Monobromofluorescein solution, 1:500, 30 c. c.

15 c. c. of this is mixed with 500 c. c. of water and 2 c. c. of ammonia, and the plates immersed in the dark for three minutes, and then rinsed in the same bath very much diluted, and dried in absolute darkness.

PORTRAIT.

Curtis Bell,
Salon Club of America.

Gold is well known to be insoluble in hydrochloric acid or in nitric acid when either are used alone, but dissolves freely in a mixture of the two, and this is the method invariably employed hitherto to effect solution and form gold chloride. N. D. Averkioff has stated to the Physico-Chemical Society of Russia that when gold is placed in hydrochloric acid no solution takes place, but in the presence of formaldehyde solution at once takes place. The same occurs when trioxymethyl, methyl, ethyl, and amyl alcohols are present. The solutions so obtained on being evaporated, dried and heated leave a residuum of pure gold.

PANCHROMATIC PLATES.—Although orthochromatic plates and films of excellent quality are made by most of our

ORTHOCHROMATIC PLATES.—Color corrected plates being one of the subjects on which we are insistent we gladly reproduce the following words in their favor by Sir W. Abney in speaking before the Physical Society. Regretting the fact that there is not yet a perfect plate, he says, "In spite of this lack of a perfect plate, the best commercial color corrected plates come very near to perfection when the appropriate screens are used, a nearness to perfection which is much emphasized by comparison of results with those obtained on ordinary plates used without screens."

PICTURES FOR THE LINKED-RING SALON.—American Pictorialists, ambitious to have their work in the Salon of the Linked-Ring, yet hardly caring

to stand the cost of sending so far on the mere chance of its being accepted, may congratulate themselves on a better condition of matters. One result, apparently, of the better knowledge of each other incident to the hobnobbing between the editor of *The Amateur Photographer* and the American members of the Linked-Ring during the visit of the former to this country, has been an arrangement by which Ameri-

can pictures intended for the Salon shall be submitted to the judgment of the American members, and such pictures as they may pass or accept shall be hung without further judging. Doubtless due notice will appear as to the time when such pictures may be sent to New York, the judging, in all probability, being held at the headquarters of the Photo-Secession in that city.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1772. C. S. KEEFE.—“Sunday Morning on the Creek.” For this we have nothing but praise and cannot suggest an improvement, nor did we ever see the quiet of a Sunday morning better suggested. Subject, selection, point of view, all are just as we like

to see them; and if (on second thoughts and after many times returning to the pretty picture) the foreground had been printed a shade or two darker it would have been as near as possible perfect. But it is too pretty to be allowed to remain as it is;

it should be enlarged to, say, four diameters when it would be a picture that would honor any wall.

1773. M. O. HOBERLEIN.—“Soldiers’ Monument.” At the first glance this is rather imposing, but unlike what a good

picture should be; the more it is studied the less favorable the impression. You have been too ambitious, have included much more than is conducive to the best effect. The roadway cutting the subject in two, leads away from the monument, the objective point of the composition, rather than to it; while the monument itself, from its size and placing is relegated to a minor position. Instead of making the road divide the subject in two and leading the eye out at the left, we should have contrived to make it lead to the monument, placed the latter in one of the stronger parts, and kept everything else in subordination to it.

Then, while the technique is fairly good it might easily have been better. The road is far too white, and the whiter sky is simply intolerable. Surely the unnatural black of some of the trees and all of the shadows,

with the equally unnatural sky must have shown you that your exposure was much too short, and that three times as long would not have been too much. But there does seem to be truth in the oft repeated statement to the effect that the craze for snapping has degraded the taste to such an extent that photographers have got to regard such blackness as the right thing.

1774. M. C. W.—“Under The Willows” is an excellent photograph of the record variety although with better atmosphere than most of the pictorial attempts that reach us; but it lacks the motive, the objective point, the something to which all else should be subjective; no one point being of more importance than another. It should not be forgotten, however, that the record is of quite as much importance as the pictorial, and, as before said, this is an excellent record. It is also a fine example of bromide printing, and one of the finest purple brown colors that we have seen.

1775. CARL KREBS.—“A Lonely Road” hardly bears out its title unless the house in the distance be unoccupied, and of that there is not sufficient indication; but the picture is not the less interesting on that account. And in selection, arrangement and treatment it is in every way satisfactory; indeed the best that we can say of it is that under the conditions it is exactly what we should have aimed at doing. While it is true that figures in landscape are risky, it is a pity that you could not have had one on his way in the lonely road, as however weary in his effort to reach the refuge in the distant left, and to which the road leads the eye so well, the tree standing out so boldly in one of the strong points of the composition acts as the well known landmark that encourages him to push on to the desired goal. It is one of the few pictures that come to us that we do not have to complain of a too short exposure, and that, except for the want of a figure, we cannot suggest an improvement.

1776. HOLYER DAMGARD.—“The White Bard,” is a portrait of Mr. Holyer Drach-

mann, Denmark's most famous living poet, and at the same time no mean marine painter. The print is a single transfer carbon, but the reversal does not in any degree influence it as a picture, although the shade of color is not just what we should have chosen; a lighter shade of sepia would have been more to our taste. The poet painter is represented as in the throes of composition and looking Heavenward for the Divine afflatus, the idea being strengthened by the blinding of the lower part of

one not likely to be forgotten, conveying as it does, one whose soul is in his work. Taking it all in all, "The White Bard" is one of the few pictures that come to The Portfolio that make a lasting impression on us and that we should like to add to our collection.

1777. T. C. LEITER.—"Cock of the Walk," although an amusing arrangement of a turkey in all his pride of plumage, domineering over a couple of hens, but

A LONELY ROAD.

Carl Krebs.

the window opposite which he sits telling as strongly as may be that he looks from light only from above. The placing of the figure and its surroundings also contributes to the idea, it not being so much a portrait of the man but of the man at work, a small figure in a large workshop with reference book-shelf at hand; all so arranged as to make us feel that we are permitted to steal a look into sacred ground. And the face, although dimly seen, and its expression is

utterly valueless from such under exposure that although development has been pushed till sky and stone path are simply white paper, the wings and much of the entourage that should not have been lower than half-dark are as black as soot. Judging from the shadows the light would seem to have been good enough, but if you would not waste good material you must get a lens working at a larger aperture or give longer exposures.

1778. J. M. SERSHOLTZ—"A Shady Nook." What was said of the last, 1777, applies equally to this, even what we suppose to represent water in the foreground being, some of it nearly, and some altogether black, while the stems of the trees and under them where "Shady" should come in, are as black as the paper could be made; while the sky and everything on which direct light has fallen are equally white.

to some other source of amusement. This, bad as it is, might be considerably improved by toning down both sky and water; but nothing short of sufficient exposure would make it a good photograph.

1780. E. L. CHAMBERLAIN—"A Quiet Stream." We cannot guess what induced you to select this subject unless for some association connected therewith. It is not picturesque, indeed we cannot see that it

THE WHITE BARD.

Holger Damgård,
Denmark.

1779. OTTO ERNST—"Sunday Afternoon," we presume in the park, and on one of the various lakes the Sunday outers are enjoying a sail. This, although in a less degree, has the same fault as the two last, and in addition the mistake of the bridge crossing the lake taken straight on. Such a white sky and equally white water are no longer tolerable and those that cannot expose long enough to secure something like nature in its representation should turn

could have been made pictorial from any point of view; and there must, in such a locality, have been many places where something better could have been found, as indeed hardly anything could have been worse. But it is encouraging, whereas its three predecessors were the reverse. The exposure has been sufficient, even a little over, although that is a favorable fault; but the development has been stopped too soon. As it is, it is flat and lacking in contrast, but

further development without adding to the shadows, would have built up the lights and given a good technique, while with an under exposed plate or film, as in the previous three, it only made matters worse. Expose as in this and develop till the proper contrast is obtained, and your technique will be satisfactory; and then turn your attention to what makes pictures and we shall be glad to hear and to see from you again.

1781. W. H. LUCKHAUPT.—"Milking," a pretty Jersey patiently giving up her morning contribution to the family table, but we

toboggan slide, and placed the figures in the centre in such a way that one expects to see them slip down to the bottom. With such an excellent technical foundation you only need to give your attention to placing and composition, and to give a little more thought to the natural appearance of things, in fact, to do most excellent work.

1782. W. H. BLACAR.—"A Bangor View." Of the two prints sent we very much prefer the lighter, both because of its truer values and the better arrangement of the subject, although neither is either pictorial or picturesque. A square tower, a kiosk or summer house and something with the appearance of an arch all buried in a mass of foliage and reproduced as only a good lens can, can only belong to the record phase of photography. And of that it is an excellent example, leaving little or nothing to be desired.

1783. L. B.—"The Maple" is a fine print from an excellent negative, but of the record rather than the pictorial variety. The photograph is an example of almost perfect technique but unless for some local or other interest, was not worth photographing, especially as single stem or trunk maple is about the most beautiful of nature's productions and are as plentiful as gooseberries.

Wm. Luckhaupt.

MILKING.

cannot recognize the poetical "milkmaid" in the rather unpicturesque woman who assumes the role. So far as the photography is concerned we have nothing for it but praise, but it is otherwise with the placing of the figures. Without, so far as we can see, any reason for it, you have the horizon line within three-quarters of an inch of the top of a five inch upright print, and by apparently pointing the camera down, have filled nearly the whole space with nothing but foreground tilted to the steepness of a

THE MAPLE.

L. B.

1784. J. W. SMITH.—"In the Woods," a girl standing amongst some saplings or small trees, is above the average of such

things as come to us, but might have been much better with more careful development. The white dress is simply unaltered paper, although we can see that the exposure had been sufficient to have given the necessary detail had it been developed with a solution weaker in the reducer, developed till just the weak image with the shadow detail appeared and then intensified to the desired extent. Then, the child is standing too stiffly, too evidently posing to be photographed. In a case like this you should

rest, the boy, although evidently posed, is so nearly natural as to deceive all but the most critical, while the dog needed no posing, but has just thrown himself down, thinking of

E. A. Sheldon.

CHUMS.

nothing but rest and be ready for another run. Of the two we decidedly prefer the less contrasty print.

J. W. Smith.

IN THE WOODS.

give the figure something to do, action being always better than at rest, and in front of the twisted stem would have been better than behind it. The photography, however, is fairly good, and you only need to put a little more thought into your work to make it pictorial as well.

1785. E. A. SHELDON.—“Chums,” a boy and a dog, has only one fault, too little foreground. Half an inch taken from the top and given to the bottom would have made it a little gem. Both are evidently tired roaming around and quite content to

1786. A. W.—“Apple Blossoms” well suggests the most delightful time of all the year, and seems to smell of the orchard. The figure too, adds a charm, although she is not quite as she ought to be, suggestive of being photographed rather than in examining the blossom. Instead of resting one hand against one of the larger limbs and letting the other hand hang listlessly by her side, it would have given an idea of action had the one been employed bringing down one of the smaller branches while the other was employed in plucking a desired bloom. A more serious fault, however, is the false values, the almost if not altogether black-

ness of the trunks of the trees, a suggestion of night not corroborated by the rest of the subject. A longer exposure or a lighter color screen would have obviated this and very much improved the picture, although as it is we like it very much. It is another testimonial to the value of orthochromatic plates and color screens; not perhaps so much for what it is as for what it easily might have been.

Just a word as to the mounting. From almost time immemorial it has been the fashion, when mounting with a narrow margin of card to make the top and sides of nearly equal width but with a larger space at the bottom, and it always looked

well. Here you have made the sides about the usual width, and the same may be said of the bottom, $7/16$ ths, and 1 in. But the top, instead of repeating the width of the sides, exceeds the bottom by half an inch, being an inch and a half, and we do not like the innovation. Looked at as it is, we keep wondering and the eye keeps moving in an effort to find some cause for the irregularity, to the neglect to a considerable extent of the picture itself. But when the excessive top is covered by a dark colored paper the picture instantly takes its place, confined by just sufficient margin from all else and wonderfully improved.

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

Federation of American Photographic Societies for Exhibition of Pictures and Education in Photographic Arts.

At the call of the Metropolitan Camera Club of New York, representatives of the principal photographic societies of the country met in the large assembly room of the Metropolitan Club, 102-104 West 101st Street, on Tuesday evening. Plans for the federation were conceived and executed by Mr. Curtis Bell, president of the local club and one of the leading art photographers.

Representatives were sent by the Boston, Washington, Toronto, Philadelphia, Chicago, New York and Brooklyn societies, and also the Salon Club of America, which is devoted to pictorial photography with members scattered all over the United States.

Mr. Bell called attention to the present difficulties and expenses connected with holding Salon and other exhibitions of pictorial photographs and showed that by organization and unity of purpose far more could be accomplished than by individual

efforts of the several clubs and with far less expense.

Among other plans proposed was the holding of an annual photographic Salon of the very highest class, the pictures to be judged by the most distinguished artists of the country and the selected work to be forwarded, in turn, to all societies in the federation. As this collection of pictorial photographic work cannot be shown in more than a dozen large cities during the season, the number of societies to be admitted to Salon membership was limited to twelve.

In addition to this, for the education of people in other cities, interested in this great photographic movement, a smaller but very select exhibition was proposed, to be prepared quarterly and forwarded, in turn, to the societies which shall be known as exhibition members.

Interchange of members' privileges was proposed and also a historical department for preserving photographs of interesting landmarks, old buildings, quaint local customs, etc., the results of the year's work in that department to be filed in some institu-

tion of national importance, as for instance, the Smithsonian Institute at Washington.

All these subjects were fully discussed and it was unanimously agreed that the objects of the proposed federation were worthy of the best efforts of all photographic societies, those represented assenting to the plan in its entirety.

Among the delegates present were,

and Daniel Baker of the Columbia Photographic Society of Philadelphia, and Messrs. Curtis Bell, S. C. Bullenkamp, and Dr. W. J. Furness of the Metropolitan Camera Club of New York City, and Wm. T. Knox of the Brooklyn Camera Club.

It is expected that a considerable number of other photographic societies will join in this important work as soon as it be-

DELEGATES TO FEDERATION OF CAMERA CLUBS.

C. E. FAIRMAN, Capital C. C. Washington, D. C. and Vice-Prest.	DR. W. J. FURNESS Met. C. C. New York.	F. C. BEACH, Toronto C. C.	W. T. KNOX, B'klyn C. C.	CURTIS BELL, Met. C. C. New York, President.	S. C. BULLENKAMP Met. C. C. New York Secretary.
WALTER ZIMMERMAN, Phila., Pa. Salon Club of America, ret Vice-Pres.	JOHN H. THURSTON, Boston C. C. Treasurer.	DR. J. G. MILLER, Columbia Photo Society, Phila., Pa.	DANIEL BAKER, Columbia Photo Society, Phila., Pa. Historian.	ADOLPH PETZOLD, Phila., Pa. Salon Club of America.	

Taken with Cooper-Hewitt Light in Metropolitan Camera Club Studio.

Charles E. Fairman of the Capital Camera Club, Washington, D. C.; John H. Thurston of the Boston Camera Club; F. C. Beach of the Toronto Camera Club; Messrs. Walter Zimmerman, Adolph Petzold of Philadelphia, and Wendell G. Corthell of Boston, representatives of the Salon Club of America; Dr. J. G. Miller

comes known, and in fact, a number of applications from societies not represented were submitted at the meeting.

It was decided to name the new organization THE AMERICAN FEDERATION OF PHOTOGRAPHIC SOCIETIES. After the adoption of a Constitution, the following officers were elected for the ensuing year:

Curtis Bell, New York, President.
 Walter Zimmerman, Philadelphia, First Vice-President.
 Charles E. Fairman, Washington, Second Vice-President.
 F. Dundes Todd, Chicago, Third Vice-President.
 S. C. Bullenkamp, New York, Secretary.
 John K. Thurston, Boston, Treasurer.
 Rudolph Eickemeyer, Jr., New York, Salon Director.
 Daniel Baker, Philadelphia, Historian.
 F. C. Beach, Toronto, Chairman Salon Committee.

Camera Club of New York.

CAMERA CLUB OF NEW YORK.—The regular monthly meeting of the club was held at the rooms of the club on Tuesday evening, May 10, President F. E. Ives presiding. Reports were presented by the different committees. The Auditing Committee, through Mr. L. B. Schram, chairman, made a lengthy report on the past and prospective finances of the club, showing that there would be a shortage covering the year of about eight hundred dollars, due to the expenses of moving and the loss on the publication of *Camera Notes*. The Committee, approved by the Board, recommended that steps be taken to secure a loan from the members in amount sufficient to meet the shortage. Later on the meeting approved the Auditing Committee's suggestion and voted that the Secretary be authorized to solicit, through a properly arranged circular, loans from members, to be repaid as soon as the club was able to. An endeavor is to be made to raise something like \$1200.

Mr. Malcolm Stuart, chairman of the Lantern Slide Committee, proposed a plan of educating members in slide making to the effect that a standard and a poor negative should be provided, and allow different men to make slides from the negatives until the best or proper method of obtaining a good slide was ascertained. By comparison of the different slides in the lantern afterwards, beginners would soon learn to

know which method produced the best results.

President Ives, chairman of the Committee on Research, exhibited and explained a few pieces of apparatus of interest, designed for testing color screens, color sensitiveness of plates and defects in the glass of lenses, also a simple microscopic camera attachment which was quite unique.

He had a very simple spectroscope arrangement fitted at the back for holding a sensitive plate. It was only necessary to interpose the color screen between the plate and spectroscope, point to the light for a second or so to test the result on the sensitive plate. In color sensitive plates he had found the Leed Rainbow brand to about equal the Cadett plate in sensitiveness to the non-activic rays of the spectrum. It is proposed to keep on file at the club spectrum tests of screens and plates for the benefit of members, and the Committee will from time to time make tests for members.

The Polariscope was shown in connection with its use in the testing the glass of lenses to see whether it has any strain in it.

He had found it very useful also in determining the color of the glass in its retarding effect on the activic rays from the object. The test was very simple and quick.

A very effective photo-microscope attachment to an ordinary microscope was exhibited, which produced remarkable detail in negatives.

He had a Bausch & Lomb standard microscope, with the tube placed at the usual angle for viewing the object. The focus was obtained in the usual way. A box having a 10 inch focus, single lens, in one end and a plate holder about four by five inches in the other end, so arranged that the film of the sensitive plate would occupy exactly the focal plane of the lens, was supported on a stand at the same angle as the microscope tube, its base arranged to pass around the supporting foot of the microscope, in such a way that the lens

in the box would come over in line and adjoin it, the eye piece of the microscope. In other words the lens in the attachment takes place of the eye and projects the microscopic image observed by the eye on to the sensitive plate. The effect is to obtain a remarkably sharp reproduction of the enlarged microscopic image. The microscope tube placed at an angle is also not affected by surrounding vibrations. They do not interfere in the least with the complete photographic reproduction.

The sharp image on the four by five plate may be enlarged on bromide paper to any size desired. Mr. Ives explained that he had been made a Fellow of the Royal Microscopic Society of London for devising this simple method. The focus is first obtained without the use of any ground glass and the attachment moved up and image photographed.

The use of the microscope is to determine the quality of deposit of silver in the negative.

Mr. Ferguson presented amendments to the By-laws relating to the appointment of Committees, which stand over till the next meeting.

Mr. Abel advised the club to offer medals for different kinds of work; thought it would stimulate members to do more. The meeting then adjourned.

On Wednesday evening, May 18, the Interchange set of the Colorado and New-ark set of slides was exhibited. Mr. Stuart put through the lantern some special long, partly panoramic, slides of mountain scenery in British Columbia, which were appreciated. He is to spend this summer in Britany, France, photographing among the interesting people there.

MEETING OF JUNE 14TH.

CAMERA CLUB OF NEW YORK.—The last regular monthly meeting for the spring and summer season was held on Tuesday evening, June 14th, at the club rooms, No. 5 West Thirty-first street, over which President Fred. E. Ives presided.

The reports of officers and committees were presented. The Committee on Loans

reported some six hundred dollars had been subscribed for. The only business considered was the adoption of an amendment to the by-laws, Section 2, of Article II., providing for the appointment annually of a House Committee, an Auditing Committee and a Librarian and also for the appointment of such other committees and officials as may be deemed proper to promote the interests of the Club, defining their powers and duties, no committee to consist of more than five members. The sections, Nos. 6, 7, 8 and 9 of Article XII., were stricken out. At the close of the meeting a representative, introducing the preparations of Dr. G. Krebs, of Offenbach, Germany, made some interesting demonstrations of the different products of this establishment, which were quite interesting.

He first demonstrated a preparation for toning developed and fixed velox or bromide prints from the usual cold, muddy, black tone to a warm sepia brown.

The color of the liquid was reddish and dark. The print is first immersed in water to moisten the film, then it is placed in the tray containing the toning solution and kept in motion till the desired tint is obtained, then it is put into a fixer called "nitrate," which checks the toning action. The print is next washed slightly and dried. Numerous prints can be passed through the solutions repeatedly. It is a very simple method and one that is sure to attract the attention of amateurs. By a mixture of other chemicals, green and blue tones can be obtained. The formula of the solutions was not divulged.

Another experiment performed was the exposure of a plate through a camera upon the meeting, using a new smokeless flashlight candle of a size intended to burn for two seconds, and then developing the plate on the table under the ordinary incandescent electric for a period of about four minutes. A camera, instantaneous isochromatic, 5x7 plate, was used and two candles were held on a thin board, one stationed each side of the camera; each was lighted with a match and burned noiselessly yet quickly and without smoke, as arranged

for. The light was much softer on the eyes than the ordinary magnesium flash. The exposure was made by Mr. Scott.

The development was made by the use of the Geka Daylight (colored) developer. A waterproof sheet or cloth was laid on the table, then the tray with the colored developer was placed on the sheet or table and outside, near by, another tray containing a hypo and alum fixing solution. The plate holder was placed on the table near the developing tray, then the loose end of the sheet was drawn over to cover the tray, the plate holder and hands. By feeling, while under the cloth, the slide of the holder was drawn out and the plate removed and dexterously slipped into the tray holding a developer solution about half an inch deep. Immediately the plate was immersed this cover sheet was thrown back, fully exposing the plate in the red developer to the light, and development was observed to proceed by the members standing around the table.

The image came up rapidly and well and in four minutes' time was fully developed. Then still in the light the plate was quickly removed to the fixing bath and in a few minutes a complete, well exposed negative, without a trace of veil or fog, was shown. The fixing bath dissipates any red color left in the film. It was quite a successful demonstration.

It appears Dr. Krebs manufactures several other photographic preparations, such as intensifiers, reducers, clearing and hardening solutions, toners, preservatives, restrainers, backing and numerous other things. It was stated an agent in Hoboken, N. J., would have charge of the distribution in this country.

San Francisco Camera Club.

This club has always been famous for its outings and our only regret has been that our lines have been cast too far from San Francisco to join them. The next best thing is to hear of them, and we have to thank the Secretary for notices of the two last. The first is a Saturday to Monday, inclusive,

concerning which he has the following encouraging words to say about it:

Sherwood Valley is the new terminus of the California Northwestern Railway, 150 miles north of San Francisco, in Mendocino County, and 15 miles beyond Willits.

The trip to Willits and to Sherwood presents a wonderfully varied panorama of scenery, through broad, fertile valleys, along the beautiful Russian River, through canyons and over mountain ranges, views of the forest and the giant redwoods, etc., etc.

We can visit the mill of the Northwestern Redwood Company, two miles from Willits, the largest on the Coast. Then the train climbs the mountains, reaching the summit at En Cima, 2,395 feet above sea level, presenting a grand view of the vast forest. In the distance, to the west, can be seen the Pacific Ocean, while to the east Mt. Sanhedrin, 6,500 feet high, can be seen; and back of us lies the rich and fertile Willits Valley, surrounded by hills, except where Outlet Creek makes its way toward Eel River. Beyond here are great numbers of redwood trees 35 to 40 feet in circumference. Within a few yards of the track is one 52 feet in circumference four feet above the ground.

Our stay will be made at Hotel Willits, the best appointed inn north of San Francisco.

The cost of the trip for the three days, including railroad, meals and lodging, was \$6.25, almost as cheap as one could live at home, and for those who could spare only the Sunday and the Monday, \$5.

The second is more ambitious, extending as it does, from June 16th to July 17th and in addition to two weeks at the St. Louis, Fair, visiting the grand canyon of Arizona; the Pueblo Indians and their ancient abode village at Laguna, New Mexico; two weeks at the Louisiana Purchase Exposition—the greatest of world's fairs; six days tour through Yellowstone Park and the wonderful geysers; returning via Puget Sound, the Columbia River and Mt. Shasta.

This trip is to be "personally conducted,"

and the estimated cost, including everything except meals, is only \$250.00.

From an examination of the programme or rather itinerancy, it is evident that it has been arranged by one who "knows the

ground" and that those who are fortunate enough to join the party will see the greatest possible number of the wonders and beauties of the districts in the shortest time and at the smallest possible cost.

HAS THE BRAIN A PHOTOGRAPHIC FUNCTION ?

Read by John Bartlett at a Meeting of The Photographic Society of Philadelphia.

The study of the phenomena of vision, although it has no direct bearing on photography, is not altogether foreign to it. Some considerations, therefore, of a peculiar sort of visual impression connected with personal experience, may be of interest if they are not of special value to the photographer who may have a scientific turn of mind.

The impressions upon the nerve-fibres of the retina, of whatever nature they may be, bear a very close analogy to those upon the sensitive film.

A picture is certainly formed there, which endures for an appreciable time, but whether this picture is directly impressed upon the cerebral substance, resulting in what we call conscious vision—cannot as yet be determined.

Impressions once made and seemingly obliterated, may be redeveloped, as we, photographically, say, by the stimulus of some corporeal disturbance, in much of their original vividness and reality, but it would be a difficult question to determine, whether in the revolution of the cerebral phonograph, an image is again impressed on the retina resulting in vision, by a reverse or reflex action.

The writer sees no reason why the nervous matter of the retina, as part of or in direct communication with the brain, should not facilitate the flow of the nervous current to itself.

I suppose most of us have had personal experience of the sort of appearances known as ocular spectra, produced by the impression of a strong light on the retina, and

which force themselves sometimes very obnoxiously upon us, even when we endeavor to shut our eyes against them. However, when they are moderate in their action they become an enjoyable study, passing through many singular and beautiful phases, and presenting a highly orderly and harmonious arrangement of form and color.

The seat of these spectra is undoubtedly the retina itself, but whether they originate there or are reflexly propagated thither from the brain would be hard to say. Light or some extraneous disturbing force, it would seem is necessary to act first upon the sensitive end of the optic nerve, but are we to attribute their production to molecular disturbance in the retina itself, or is the retinal stimulus the exciting cause for the cerebration?

Might we presume to say that their production is part of that photographic process by which light acts chemically upon the retinal substance, and that there is a gradual restoration of that organ to its normal state of resensitiveness by the fading out of the pictorial impression? It is from this belief that I think my personal experience may be of some interest to photographers if not to any one else.

But how are these impressions made upon the retina? Are they projected from something without or are they mentally evolved? The phenomena, which I am about to describe, are seen as things in space like any other material things, but are they visual externalities? Are they not really objects in the mind's eye though actually on the

retina? I do not mean purely subjective and visionary, but real products of the brain or pictures made by the brain.

There are certain peculiarities about these spectra which make them essentially different from visions or hallucinations. Often they have definite geometric outlines, and frequently form intricate patterns like the figures on a Turkish rug. The lines are sometimes dark on a light ground, and sometimes the reverse; negatives and positives of the same pattern. Sometimes they are very complex and most beautifully graduated in color.

They change from instant to instant and do not admit of a very close study, even sufficient to depict them rapidly—else they might be quite a boon to any one designing patterns for the carpet trade; however, they always change on a systematic principle and seem to have a law governing their formation not unlike the systems of crystallization, each succeeding one being a variety or modification of its predecessor.

They have a sort of fixed axis about which the transformations take place. It seems as though the agency, whatever it may be, had a very definite plan and a consciousness of what it is doing, however much concealed from our knowledge. This definiteness is an evidence, I think, that they are not the product of disturbed nervous condition of the percipient. There is no co-ordination of action in hallucinations.

These pictures are not reproductions of objects recently seen, or probably ever seen before—memory pictures—but are quite novel in their structure and unexpected in their plan of presentation, and might, as I have said, be advantageously employed, could they be detained long enough to catch their fleeting beauty, for no effort of the will, at least not in my experience, can fix them. But this fugitiveness does not preclude them being observed and described *pro tanto* in general terms.

They have an uncontrollable freedom of their own will and seem to take a sort of malicious advantage of it in changing the combinations. I have frequently tried to fix

their shapes by an effort of the will, but they ever changed "into something far more rare and strange" than my imagination had power of conjuring up. They appear to be painted on dark space or on light space by some invisible dextrous artistic hand.

I shall not dwell longer on this part of the subject, though I know I could make it most interesting by more accurate description, my purpose being merely to direct attention to a particular phase of the phenomena which some might be inclined to call hypnotic vision and dismiss the subject with a sneer—and who can answer a sneer?

These impressions about which I shall speak are not so vivid or eye-hurting in their manifestations as the ocular spectra, but may be studied with quite as much wide-awake observation.

Indeed when they present themselves as they frequently do quite unexpectedly and wholly independent of the will power, they cannot be distinguished from actual visual impressions, and the beholder may believe that he sees them. And does he not?

Though independent of the will they do not persist long, yet endure longer than the geometric figures, dissolving slowly like dissolving views in the magic lantern. I have frequently tried to make the presentations take forms accordant to my fancy, but no—like Glendower I might summon up spirits from the "vasty deep," but they would not come when I did call them. They presented something always entirely different from my desire, something so unexpected, so delightful, that I suppose the desire to revel in the enjoyment of them weakened the power of the will to control their formation. Like the ocular spectra patterns some invisible ingenious painter seemed to be embodying them.

Most people are not aware, until they question their experience, that they possess more or less the power of seeing forms and faces in the dark, not in absolute darkness, but when a faint halation of light is present.

People not by any means visionary have

told me of the possession of this faculty—for it is a faculty—and in many cases a source of amusement and delight when one is in perfect health and buoyancy of spirits, but under depression of mind their occurrence might be unwished for on account of their incongruity to the mental state. "The mind in grief," as Shakespeare says, "being best pleased with grief's society." For these images are sometimes of a most humorous character, never in my personal experience of a hideous nature nor in any way approaching the visions which Swedenborg regales us with. But they are so persistent, so self-willed, so obtrusive at times, that one is tempted to say, "Take any shape but that!" Though produced involuntarily, they continue long enough in a definite shape and relation, and can in a measure be studied from different points of view, each angle of view, strange to say, like a real object, changing properly the play of light and shade most beautifully.

The vision of landscape (I ought not to say vision but rather presentation) is not as frequent in occurrence as the sight of faces and forms, but the landscape is always more distinct and seemingly more real, though subdued in a soft peculiar light, "a light that never was on sea or land."

The contemplation of these scenes is most delightful, the play of light and shade varying with every shifting of the eye, that is they have both linear and aerial perspective. It is this peculiarity which would persuade us that they are real. It is only that judgment coming quickly to our aid tells us—I was going to say—that they are the unsubstantial fabrics of a dream, but these impressions are waking impressions, not dreams. Call them waking dreams if you will, but account for them otherwise than by referring them to a proximate cause.

Had I power of the poet I might delight you with a description of some of these wonderful pictures which have occasionally presented themselves, and had I the skill to portray I might shine as an ideal painter. Unfortunately I have not the faculty and art divine, but I think the great painters must

have possessed something akin to this faculty, coupled with the gift to hold and fix the impressions. I remember reading that Goethe speaks of his delight in experience of an identical kind.

So intensely, on one occasion at twilight, was a landscape presented to my view over a hazy background of meadow land, that at first I thought I was looking at a mirage—

"So pure the sky, so quiet was the air,

So like so very like was day to day.

But when I looked, no image still was there,

It trembled and it softly passed away."

This quotation is from Wordsworth, and I believe he wrote from actual experience of this sensorial visual faculty.

I am perfectly willing to admit that the imagination may interpret forms in themselves indefinite as the expressions of realities; for even the most prosaic amongst us can see faces in casual blots, or pictures in clouds and in the fire. But no such explanation is applicable here. These are involuntary impressions in which definite regularity and actual coherence and relations of parts predominate. The imagination is not called in to supplement or to eliminate parts, so as to isolate the image from its surroundings.

It is obvious that a regular geometric pattern or a coherent structure of pictorial intent cannot be suggested to the imagination by forms having no regularity so that the question will force itself upon us, how to explain this strange sensorial vision.

What a maze we would get into if we should attempt to explain the connection between bodily and mental or spiritual organism, but what a wonderful study it does open.

Is there some intelligence working upon our organization distinct from that of our own personality, whether external or resident in us? But this explanation might be objected to as ontological and outside experimental science. Or can the phenomena be explained in purely physical terms, as a

quasi-image formed on the retina by the sympathy of the nerve-fibres with the brain, and their impressions delivered back to the sensorium as that of a reality?

Or another solution is suggested. Has the sensorium the power to combine symmetrically separate elements independent of the will to the formation of definite new patterns or scenes, or are these impressions nothing but the revivication of dormant hereditary concepts?

To produce a definite regular symmetric arrangement of lines, angles, lights and shades, and a disposition of colors for the formation of distinct patterns, or pictures subject to geometric rules and in accordance with the artistic laws of harmonious color and composition, seems to imply a conscious producer which the ontologist would call the spiritual essence, or the psychologist mental cerebration. The one referring the cause to some super-sensual agent, the other to molecular chemical action of cerebral corpuscles.

But with any explanation we must acknowledge that every event has a cause. Yet if the human will is subject to what appear to us the caprices of a more powerful will, the question of man's responsibility for his actions or credit for his mental achievements, comes in to be accounted for.

We do not feel specially elated with the consciousness that we may be nothing but inspired idiots after all. Philosophers as well as theologians have generally maintained that man is a moral agent and that he has perfect freedom of the will, else he becomes a mere conscious automaton controlled by an overpowering and arbitrary environment.

But what determines the will to a choice? Especially is the question involved when there is no predisposing bias to determine the direction of choice. The mind is a wonderful mysterious entity we are almost justified in calling a spiritual essence, but the impact resulting in visual perception (I mean here ordinary visual perception) is a physical manifestation and as much a molecular disturbance, whether external or

internal and reflex in its action, as the impact of light upon a sensitive plate.

The whole subject is one worthy of a study from a physical standpoint by one more capable of investigation than the writer, and should not be summarily dismissed with the proffered salutary injunction to the narrator:

"A solemn air and the best comforter
To an unsettled fancy cure thy brains
Now useless boiled within thy skull!
There stand, for you are spell-stopped."

The reading of the paper was followed by an interesting discussion, of which the following is part:

Mr. Elliott inquired if these visions were seen in the day-time, and if projected into space. Mr. Bartlett said they were seen in the day-time, generally in a dim light, and the visions were outside of himself. He had heard of other cases where persons possessed this faculty.

Dr. Robinson said that the experiences described by Mr. Bartlett were well known facts. They were probably caused by irritation of the visual centre, and sometimes by migraine—that is, a headache which affects only one-half of the brain.

Dr. Sartain said that the subject under discussion was most interesting. The conditions mentioned by Mr. Bartlett no doubt arose from overstimulation of the optic nerve. It was well known that the eye was stimulated by certain colors, such as yellow or red. One of his patients was subject to visions in the nature of a kaleidoscopic stream of broken glass. Another saw a stream of bayonets, all of the same form.

In speaking of the tricks performed by the noted Hindoo jugglers, he questioned whether the spectators really saw what they thought appeared before them, or whether the whole thing was a species of hypnotism. He had seen it stated that in cases where photographs had been taken of these performances, no record of the occurrence appeared on the negative.

Mr. Samuel Sartain spoke of William Blake, an English artist, who possessed the

power to call up the image of Edward the Third, Robert Bruce and others, and painted their portraits from these images.

Dr. Mitchell doubted whether hypnotism could account for all the remarkable tricks performed by the jugglers. We were not all affected alike by hypnotism, and he thought that the cases mentioned, where photographs had been taken, were not well authenticated. It was a well known fact in law that no two statements by witnesses

of an occurrence were alike. Allowance had to be made for the individual temperament and the health of the observer, which rendered it very difficult to get facts.

Mr. Abbott said he had witnessed performances of jugglers in Morocco, in the middle of the market-place, where it was very difficult for hypnotism to have the effect mentioned, as it was almost impossible to hypnotize the whole community.—*Journal of the Photographic Society of Philadelphia.*

"TO SEE OURSELVES AS OTHERS SEE US."

And something about the hanging of the British Photographs at St. Louis by
A. HORSLEY HINTON.

The powers that be, desirous that photography, as practised in Great Britain, should be properly represented at the great World's Fair in St. Louis, appointed a Commission to see to it, and that in its turn appointed A. Horsley Hinton, editor of *The Amateur Photographer*, to come over and see to the hanging of the collection; probably the best that could possibly have been made and certainly the best that has ever appeared outside of Britain itself. On his way home he stayed over in New York long enough to write to his paper the following account of some of his experiences, some of which some of us would be none the worse of taking to heart and thinking over:

Frequent reference having been made in these pages to the St. Louis Exhibition, it is possible that some notes may be interesting, and may even be expected, now that something like an announcement of the British photographic section as *un fait accompli* may be made. A letter from St. Louis reached me in London about the end of April, stating that all the cases of photographs had duly arrived, and that by the time I would reach the great Mississippi city all would be ready for the hanging. So to put it picturesquely, I "girded up my loins" and set forth on what proved to be a twelve days' journey of something like five thousand miles westward. But whatever the great American people have overcome, they have not yet learned to control the caprice of Fortune, or to avoid those unforeseen accidents which bring about delays, and I reached St. Louis one Sunday

morning to find the packing cases intact, and the space which was allotted to photographs occupied by several tons' weight of heterogeneous matter, ranging from waste builders' material to half-finished models of lightships, empty packing cases, and glass show cases. Further, the entire twelve hundred acres devoted to the exhibition was a scene of extraordinary chaos, out of which an army of men, busy on a not very evident scheme of construction, were, one was persuaded, gradually evolving the latest wonder of man's ingenuity.

And this was the condition of things only a fortnight before the official opening! Come what might to the exhibition as a whole, it was necessary to me that those photographs should be unpacked, the space cleared, and then the photographs first laid out on the floor, and arranged in the groups, and with the spacing which I was to obtain on the walls. Labor was scarce, by which I mean "workmen," not the work; moreover, such a chance as a huge public exhibition, which must be opened in a more or less complete condition by a certain date, is an opportunity for striking which the members of the various trade unions in America could not omit to profit by, and so strikes amongst carpenters, plasterers, etc., were of almost daily occurrence, and by the time I reached this scene of extraordinary activity with mismanagement, the men who were merely required to screw the little brass plates or hooks on to the backs of the picture frames were being paid half a crown an hour, and half as much again for overtime after four p. m. £6 per week

for work of the most simple and unskilled kind might tempt a British workman to pack up forthwith and take a steerage passage to St. Louis; but then the British Royal Commission is prohibited from employing any but native labor under pain of being boycotted by each and every other workman in the various crafts which in so complex a matter as exhibition construction are inevitable.

Not a screw, not a tintack may be driven in by any but a full-fledged union carpenter, who in turn may not encroach upon another's calling by so much as cutting a piece of glass or smearing over a square inch of damaged plaster. I mention all this to instance difficulties encountered not only by myself, but all those who in the interests of the British exhibits are sojourning in St. Louis, a city which but for the number of its population and actual area seems about the last suited for the venue of a great international fair.

I take this earliest opportunity of acknowledging the ready and kindly help tendered by everyone on the staff of the British Royal Commission, and but for this help the completion of my task would have been impossible.

Perhaps some commiseration was felt for the man whose enthusiasm in the cause of British photography had brought him at the sacrifice of time so far from home, and I am not a little proud of being able to record that, despite obstacles, I was able on the 17th of April to report to the Commissioner-General the completion of my task, and British photography, pictorial, scientific, and historical, was the first section in the whole of the great St. Louis Exhibition to be finished. One hears in England a great deal of the time cutting and hustle of our contemporaries in America. Well, up to the moment of writing these notes I am seeking the American who will make the pace for me!

Whilst the sorting and the arranging on the walls of the scientific and technical photographs brought together by Sir William Abney, assisted by Mr. A. W. W. Bartlett, fell to my lot, as also the superintendence of the 300 historical photographs sent by Sir Benjamin Stone, it is with the pictorial section I was primarily concerned and chiefly responsible.

I had furnished the Royal Commission with drawings of the wall decoration which I desired, this being much on the lines of the last Photographic Salon in London, namely, undyed canvas for the main part of the walls, divided up into panels with "slats" of white painted wood, a grey tinted frieze

above, edged top and bottom with a deep white moulding, the frieze to bear at intervals some lettering stencilled by Mr. George Walton.

Now the usual course when planning a group of pictures for the wall is to lay them out on the floor, in exactly the position they are to occupy, and with the precise separating space they are to possess, and when after various trials this seems satisfactory, the workmen can transfer the pictures from floor to wall by exact measure and rule. But in America there is here a slight unpleasantness. The metal spittoon, oftentimes quite an ornamental burnished vase, which stands at every corner, and at every few yards in the hotel corridors, in every room, railway carriage, station, shop, in short, everywhere, as ubiquitous and as omnipresent as it is incessantly requisitioned, is absent in an *unfinished* exhibition gallery, despite the presence of thousands of American workmen. Perhaps the unpleasantness may be imagined without further reference to what must to English readers be an objectionable topic, but the trouble with me was a very real one.

But there were difficulties of another kind which tried one's ingenuity rather than one's sensibilities. The catalogue of the photographs had to be printed in London before ever the works were packed; alphabetically listed, according to the name of the exhibitor. It was pointed out to me that I was under no necessity to follow the order of the catalogue, as obviously such would be impossible; yet when I began to arrange the pictures, and realized how annoying it would be to the serious student to have to encounter first, perhaps, No. 107, next No. 5, and next No. 230, and to dodge about in the catalogue to discover the title and author, I determined to try and consider the condition of such a visitor, having myself on various occasions learnt the annoyance of an exhibition so catalogued.

I mention this fact because, whilst I am quite content to take the criticism which will no doubt come sooner or later, I should like those who find fault with the hanging of the photographs to bear in mind what the conditions were, and what has been attempted. Again I imagine that in the present case those who visit those photographs with which I am concerned will go to study them with a view to becoming acquainted with British work generally, and also the character of work by individual workers; hence, partly with this in view, and partly in consequence of the conditions enforced by the previously compiled catalogue, I have as far as possible kept each

worker's pictures together. I know this plan will not have the approval of many of my confreres in England, but, as it happens, the total effect on the St. Louis walls does not, I think, condemn this course in practice whatever may be the theoretical objections.

Thus at the commencement will be found two narrow oblong prints by Mr. John H. Anderson, following which are a number of the best of Craig Annan's well-known works. Then after a conveniently placed white upright come some smaller pictures by Aston (W. Smedley Aston), and followed by another white upright, a group of Ashton's oriental studies (Ernest R. Ashton). This disposes of the A's. The B's were not quite so easily handled, the wall space being here and there interrupted by a door, and just here I was anxious to get an imposing group of large pictures, which would be seen from an arched entrance which fell here, and so, deferring the B's for a few feet, Mr. George Davison's exceptionally fine contribution comes next, and then Bennington, Barton, Blount, Baker, and Burchett follow.

The centre of the largest bay is effectively occupied by twelve pictures by Mr. Alex. Keighley, Nos. 163 to 174, with Baron de Meyer's forming a panel by themselves on one side, and Viscount Maitland's one picture, "At Litlington," with three little pictures by Muir, forming another panel on the other, and close handy are three or four pictures each by Marriage, Mummery, Murchison, Moss, and Mortimer. Then on a portion of wall which by the construction of the building slightly detaches itself, are the Robinsons—three by the late H. P.

Robinson, and a most satisfactory representative selection by R. W. Robinson.

Next Sutcliffe and Sinclair, whilst Thomas, Warburg (J. C. and Miss), Wellington, and Wright (P. G. R. and T.) close the section and the alphabet.

I suppose no similar show has ever been arranged on an alphabetical plan, and I should not have chosen so to do but all things considered, I have thought it best, so long as the effect was not wholly undecorative, to meet as far as possible the convenience of the visitor and student, and so fulfil the purpose of a national section in an international exhibition; but whatever the aim and whatever the circumstances I am prepared to stand by the result, in effecting which I was not a little helped by having sufficient and even ample wall space.

So far as the utter unreadiness of the displays to be made by other nationalities could indicate, supplemented with such meagre information as one could gather, no other country will make anything like so complete a show of photography as Great Britain. The position of American photographers may be learned by reading *THE A. P.* for April 14th, and whilst it would no doubt have been gratifying to British photographers to have had their work hung in the Fine Art section, along with the works of our greatest English painters, as that was impossible, it was better to have the really fine show which, as at present, finds itself side by side with the not wholly incongruous exhibits of engravings, colored prints, and fine bookbindings.

So I must leave the St. Louis Exhibition for the present.
New York, April 21st, 1904.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol Tiooga Centre, N. Y.

THE PHOTO-MINIATURE, No. 61, begins a new volume, the VI., and assumes a new dress; the same color, "true blue," but a larger and less easily read lettering and without the aristocratic hyphen, and when we say that its subject is "Methods of Control in Pictorial Photography" and that A. Horsley Hinton is its author, we have said enough to induce every one with pictorial ambition to secure a copy.

While the subject is too well connected

to favor extracting we may, by way of strengthening our plea for the "Trinity of Technique" presently running in our pages, quote the author's opinion on two of that trinity. In speaking of the choice of a plate he says "I cannot conceive of any pictorial worker failing to avail himself of the advantages which are offered by color-corrected plates and a light filter or screen"; and regarding backed plates he says, "The artist must be as little hampered as possible

by technical limitations, and as the 'backing' of a plate overcomes one shortcoming with respect to rendering intense contrasts and detail in high lights, without introducing any corresponding disadvantage, the photographer is handicapping himself if he does not benefit by the superiority of backed plates."

We may add that its size has been increased from 48 to 64 pages, and there is much interesting matter aside from the principal motive of the number, especially the "Postscripts" throwing more and in some cases newer light on some of the numbers that have gone before.

* * *

A CLASSIFIED LIST OF BOOKS ON PHOTOGRAPHY.—This also comes from Tennant & Ward, and is just what we have been looking for for a long time. One of the questions that come to us most frequently is as to books on various subjects, and although we have been acquainted with all or most that have been published, our memory is far from as good as it once was; and here we have almost everything, or at least something on almost everything. The list is wonderfully complete, containing sixteen pages of closely packed small type, and embracing all the most desirable works on photography and its application at present obtainable in the English language; with publication dates, size, number of pages and prices, as a guide to their intelligent selection by buyers. The photographer is not worth his salt who cannot, in looking over this, find something that he would be the better for buying and reading; and the sooner our readers generally send to 287 Fourth Avenue, New York, for a copy, the better for them. A post-card will do it.

* * *

THE PRACTICAL PHOTOGRAPHER, American Edition, Nos. 2 and 3. No. 2 deals with "Printing on Bromide and Gaslight Papers," but begins with an appreciative article on the work of A. Horsley Hinton, giving three excellent examples. While we cannot say that there is anything practically new in the

contributions of the various writers, there is enough to enable any one to overcome all the difficulties of such printing methods, and that is all that any one need to ask. The two numbers have made a good beginning and if it is kept up the Practical Photographer will enjoy a large share of public favor.

No. 3, which is for June and so brings it up to date, is devoted to "Developing and Developers" and may be said to deal with the subject exhaustively. From the three numbers we are enabled to get the hang of the publication, and may say at once that it has taken its inspiration from *The Photo-Miniature*, dealing only with one subject at a time, but instead of trusting to one writer each may be said to be a "symposium" by several. In addition to the main subject each number so far, has by way of "leader" an appreciative notice of the work of some well known pictorialist, that in this being Ernest R. Ashton who has carried his camera twice round the world and photographed almost everything worth photographing.

His Oriental pictures, eight of which are reproduced, have never been beaten, indeed rarely approached; and by way of helping others to do as he has done, he mentions as contributory to it, the use of arthochromatic and double coated films, and exposure always sufficient to register the shadow detail as absolutely necessary for truthful representation.

Three of the eight pages which apparently constitute the American contribution to the number are occupied by F. R. Fraprie on "Stand Development," and we mention it because of a recommendation to employ *zinc tanks* for the purpose, and he says that they are so much used in Germany that the dealers keep them in stock. The italics are ours, and it may be that they can be made to answer the purpose and that the Germans so employ them, but we have our doubts, and should not care to trust a batch of plates from which we hoped to get valuable negatives to one of them. We believe in "tank development," but employ a *rubber tank*.

WITH THE CAMERA, the monthly circular of the Illinois College of Photography, is less interesting than usual, unless perhaps, to the students themselves, as it is mainly taken up with records of visits from former students; the one thing observable being that they all seem to be successful whether as assistants or principals.

There is, however, one statement that should interest those who may be thinking of learning photo-engraving, and it is this. "The Bissell College of Photo-Engraving could place eighty graduates at the present time if they had them." And we have no doubt as to the truth of the statement, as good photo-engravers are very much wanted.

Since the above was written we have received from the College a notice that during the Summer months, in consequence of the slacker season and the necessity for retaining the Faculty complete, those desiring a six months course, a special and well-patronized course, by remitting now \$100 will be credited with a paid-up six month's scholarship, with permission to enroll at their convenience; thereby saving \$25, the usual fee being \$125.

* * *

JOURNAL OF APPLIED MICROSCOPY. ETC.—
"With this issue, completing the sixth volume of the journal, its publication is closed," so says the editor, and we are very sorry to hear it; sorry because we valued it as high as any and higher than most of the exchanges that come to "Our Table," and sorer, perhaps, because it's coming to what we have no hesitation in calling an untimely end very much lessens, in our estimation, the character and ability of the great mass of so-called science teachers throughout the land. Dealing as it did with laboratory methods and apparatus, and by some of the most advanced teachers of the country, we would have thought that not one of the thousands in high and other schools who pretend or profess to teach science both by precept and example, would have been without it, and yet the fact remains that, as the late editor says, "they have not evidenced

sufficient interest in it" to warrant its continuance. We only wish that we could be multiplied so as to obtain a seat in every school board in the land, in which position we should do our best to replace such teachers by others more fit for the positions.

* * *

THE BAUSCH & LOMB OPTICAL COMPANY, Rochester, N. Y., has just placed on the market the new Zeiss lens—Tessar f/6.3. According to the business arrangements between this Company and the firm of Carl Zeiss of Jena, the Rochester factory is now turning out this new objective in large quantities after the original formulae of the inventor, Dr. P. Rudolph, and employing the new Jena glass recently discovered and now manufactured especially for the Tessar series. Bausch & Lomb, having completed the arrangements necessary for the production of this new lens, have announced their ability to give immediate attention to all orders. Literature descriptive of Tessar may be had from photo dealers throughout the country or upon request from the Company's office at Rochester, or the various branch offices.

From the fact that this new objective is a result, both of the most recent optical computations of a member of the famous Zeiss staff of scientific experts, and likewise of the newest optical glasses, it is a somewhat difficult matter to adequately describe its merits.

Tessar construction is simple compared with that of some of the other Bausch & Lomb-Zeiss series. It is an unsymmetrical doublet of four thin lenses, the rear pair cemented, the front uncemented. Through the successful application of the formulae and the character of the new glass, the manufacturers have produced a lens of remarkable light-gathering and light-transmitting power. The separation between the lenses is ample for the fitting of the Volute or Iris Diaphragm shutter.

Tessar works at a speed of f/6.3, which is sufficiently rapid for all instantaneous work. The great quality of the lens, however, is that this rapidity is combined with perfect definition over a field of wide

angular extent. The image is uniformly and precisely clear and sharp from the center to the margin of the plate. Tessar is adapted to hand camera work, portraiture, groups, landscapes, industrial and reproductive photography, copying, enlarging and projection. For amateur use its compactness and moderate price are two

great recommendations, but its chief claim to a place of dignity and importance among the highest grade photographic lenses will be found to lie in the fact that where uncommon requirements of instantaneous and professional photography are met with, Tessar's ability to produce the most perfect results is not to be questioned.

LETTERS TO THE EDITORS.

A Query and a Suggestion.

Dear Sirs:

I see in the May number that Mr. Doscher of Texas, says that "W. H. Blacar denounces this (Milton Waites) method." Now I could not well denounce it as it is the method used by every one, and Milton Waite has added some minor ways of his own, as every photographer does, and whether they are of great value or not there may be a difference of opinion. If Mr. Doscher will take the trouble to look in the March number and read carefully your answer to my letter (which letter I doubt if he has ever seen he can easily see that my claim was that the book was not worth the cost to any *well-read* photographer, *amateur or professional and that was all*.

Would advise him not to be so quick on the trigger in the future. Now to pleasanter matters.

That Snow Scene on page 226 does look like real, cold snow and is a pretty picture, but do you think that the tree trunks could have been got by straight photography? I should have no objection to penciling, but could it have been made perfect without the faking?

I send by separate cover a brush that I find convenient and not *very* costly and if the idea is of any use to others you might describe it in the AMATEUR. I am now using for the summer, Seed's Orthochromatic Plates and rather think that I shall continue to use them. Will send some prints when (if) I ever get any good ones.

Yours respectfully,

WILLIAM H. BLACAR.

[When we come across as good picture as that to which our correspondent refers, we do not ask whether it was produced by "straight photography" or whether it was in any way helped, so long as such aid, where it was employed, did not betray itself; the result and not the means of its production is what we care for. The brush which our correspondent kindly sends is our old friend the "Blanshard's" slightly modified. Instead of a piece of "swansdown calico" doubled and fastened round a strip of glass 2 inches wide, by an elastic band, Mr. Blacar makes a clip of two pieces of thin wood 2x2 inches, held together by an elastic, the band being about a third from the thinned edges between which the brush proper is inserted. This is a strip of thin muslin 3x24 inches, and doubled into a flat roll an inch and a half wide; and the easiest way to insert it is to place a pencil between the pieces of wood close above the rubber band, pressing the long sides of the two so as to open the clip, and there you are. Where chemicals likely to be acted on by the wood are used, slips of glass might be substituted for the wood; and such a brush will be found of use for many purposes
—Eds.]

Stripping Films.

Dear Sirs:

Recently having occasion to strip a film from glass plate I looked for directions for doing same. Of course the ordinary method, given by various authorities, was with hydrofluoric acid, but when I came to inquire of the professional photographer for it I found they did not have it, in fact had

no use for it, as they never had occasion to strip a film from plate, and when I went to stock house and drug stores I found there was so little call for it they did not keep in stock.

At this time I recalled seeing an article in the *AMERICAN AMATEUR PHOTOGRAPHER*, and by reference found it in the November, 1903 number, and formulae was composed of caustic and carbonate soda and ammonia. Your comment was that the ingredients were such as theoretically were inclined to soften and injure the films and requested that some one with more time give it a trial. Having all the necessary material I mixed up following: Water, $2\frac{1}{2}$ oz.; carbonate of soda, 460 gr.; caustic soda, 23 gr.; liquid ammonia (household article), 30 min. I made this small a quantity as I merely wanted to try the experiment on a 4x5 plate, and did not follow the formulae exactly. I found that if made nearly or in fact a saturated solution, as all, the soda would not dissolve. I put plate to be stripped in water for couple of minutes, then in the solution for 10 minutes, took it out, at which time the film had slightly swelled and had a greasy appearance. I blotted it off and let dry for several minutes, then took my knife and started on one corner, where previously to wetting I had cut around the entire plate about $\frac{1}{8}$ -in. from edge, and was highly pleased to see the operation was a success.

The film, while damp, was not enlarged to any perceptible extent. Now the directions were to put film in book and keep in that manner, but as I wanted it mounted I had glass plate ready and so dropped film in tray of water for several minutes in order to soften so it would adhere to plate without any preparation of gelatine solution. The bath caused it to swell slightly which increased its size possibly $\frac{1}{4}$ -in., but when I put on plate and smoothed down and worked out air bubbles and dried, I found it had adhered as nicely as one could wish.

It certainly is a better formulae than that using hydrofluoric acid, and the amateur can get the necessary articles at his home drug store, where it would be impossible to get the acid. As to the effect of the chemicals on the film, I am not wise enough to say and it may be that even without washing the film no bad results would ensue, but the ease with which the formulae works should be a boon to those who have plates with defects of some choice subject. While I have only made the one experiment I shall try it later on when I have leisure time.

St. Joe, Mo.

ED. GOODRICH.

[The formula referred to will be found on page 512 of our November, 1903 number. The "liquid ammonia" prescribed is not the "household" as used by our correspondent, but the strong solution (0.880).—Eds.]

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

Selection of Lenses.

OSCAR F. BLOMBERG.—Yes, you can use the one lens on both cameras, and most conveniently by having two flanges, one on each frontboard. But, if by "a 5x7 lens" you mean an anastigmat listed to cover that size, you should know that such lenses are generally of too short focus to give a perspective that appears correct. Not that the perspective is false, but that it takes you too near the object for the production of the proper effect. It may be taken for granted

that a lens should never, for ordinary landscape work, be shorter than the diagonal of the plate that it is to be used on, eight and a half inches for a 5x7, and ten and a half is very much better. In listing lenses the optician regards them only from an optical point of view, and the larger a plate that he can cover perfectly by a lens of any particular length of focus the greater the optical triumph. But he takes no account of the pictorial effect, nor by the statement of the covering power of the lens does he

in any sense imply that such a lens is suitable for pictorial work on that size of plate.

Frilling.

FRILLING.—Yes, during the approaching hot season, alcohol to the extent of twenty-five, or even fifty per cent. of its bulk, may be added to most developers when there is a tendency to frilling or softening of the gelating either in plates or papers. For years, however, we have not come across a paper or plate with the slightest tendency to softening.

Toning Difficulties.

X. Y. Z.—The possible colors or tones as you call them, depend more on the density of the negative than on the toning solution; and from the print sent it is very evident that the negative is far too weak or thin to give anything but the brown you have got. Nor can it be improved by intensification, the shadows being represented by bare glass could take on nothing, and adding to the lights would increase the hardness to "soot and whitewash."

Restoring Daguerreotype.

N. H. DECKER.—The "old fashioned photograph on a copper plate" is a Daguerreotype, and now that you have unbound it, the most delicate and easily injured of all photographs. The image is formed by a deposit of mercury on a surface of silver, but so slightly adherent that the slightest, even a touch by a camel-hair pencil will disturb or remove it. The discoloration caused by the action of the brass mat on the mercurial surface cannot be removed but all within the oval may, by proper treatment, be made as bright and good as ever. We have frequently done the work with success in the following way. Immerse the plate, face up, in a solution of potassium cyanide, about ten grains to the ounce, and gently rock the tray till the restoration seems complete, and if it should not be so for ten minutes or so, it may be transferred to a solution of twice that strength. The plate is then removed from the solution and washed with a very gentle stream, first of ordinary water and

finally with distilled water, and while the last drops are falling from it it should be gently warmed over a spirit lamp, taking care that the whole surface is equally warmed, and at the same time blowing with the mouth to hurry the evaporation. But although the operation seems simple we should not advise you to attempt it if the picture is of value, as only those who have had experience in daguerreotype work can be trusted to do it with safety.

Before replying to your questions we would say that it is a pity to spoil the action of such a fine lens as you have by the addition of the so-called "Ampliscope" as you can hardly expect with such an addition to make a sharper or better result than the copy sent.

Far better to make a temporary addition to the length of the camera or better still, get a lens of short enough focus to make the copy the size you want. (1) This question is already answered. (2) If by retouching "the plate" you mean the daguerreotype, it must on no account be touched in any way or with any thing beyond what has been said about restoring it; but if you mean the negative made from it it may be retouched to any extent, even to the putting in of the eyes. (3) If the daguerreotype is rebound so as to exclude atmospheric action it will remain unchanged indefinitely. We quite agree with you in your opinion of much of the writings referred to and try as far as possible to keep them out of our pages, although they will slip in occasionally. Never hesitate to ask, we are always ready to answer to the best of our ability and when there is anything that we do not know we generally know where to look for the information.

Removing Marks on Glossy Prints.

C. T. ENG.—Your trouble is the well known "friction marks" so frequent on glossy velox and especially on the "special" glossy variety of that paper, and we know of nothing better or even so good for its prevention as the trace of potassium cyanide recommended on page 488 of *The Photominiature* mentioned; and although it is "a

deadly poison" it is so only differing in degree from pyro, mercury, bichloride, and some other things handled with perfect safety with ordinary care. While the formula in our April number answers perfectly for almost all kinds of developing paper, for the special glossy velox we prefer that on page 487 of the Photo-Miniature, and with especial care as to the quantity of bromide employed. The formula calls for one grain in twenty ounces, while Boursault recommends from ten to fifteen. Rubbing the surface of the print with a wad of cotton, moistened with alcohol, will also remove frictional markings.

The enclosed print gives ample evidence of having been printed from a negative not the best suited for special glossy velox, which should be thin and full of detail, a steep graduation, while that employed has been under-exposed and over-developed to an extent that has resulted in hardness and opacity where there should have been little more than middle light.

Renovating Camera Bellows.

C. H. DICKENSON.—For stopping leaks in camera bellows the popular and simplest method is to paste over them a piece of black court plaster or even black paper, but that is hardly available for leaks in the corners. A varnish that is easily worked into them may be made as follows: In a strong solution of shellac in alcohol rub up sufficient lamp black, and to give it the necessary flexibility, a trace of soap. This should be well rubbed up with a spatula on a slab or plate of glass and applied with a suitable brush. Instead of shellac in alcohol, albumen may be employed, but it takes a longer time to dry and is not, on the whole, so durable.

Carbon Printing.

T. C. WALKER.—Absence from home and lack of time since our return have till now prevented our replying to your queries, or rather making the necessary experiments to enable us to do so. Regarding the first, the keeping qualities of carbon tissue when

washed after printing, it is natural to suppose that where the unaltered bichromate has been thoroughly removed by washing and the tissue properly dried no further change should occur. We have several prints under notice that a fortnight ago were printed and washed, and one developed immediately after. Others were developed after the lapse of each three days, and so far there seemed no difference either in the time or temperature of the water necessary for development. The remainder we shall keep for a month or two and return to the subject.

As to the benefit to be derived from the displacement by alcohol of the water, and consequent quicker drying after sensitising, we cannot say. Alcohol in this country, thanks to the carelessness or worse of our Government, is too costly for such experiments; but we have no reason to doubt its success.

Combined Toning and Fixing.

J. H. MONTGOMERY.—The Combined Fixing and Toning Bath which we have used for years and which has been given again and again in the magazine, is simplicity itself, gives fine colors, and if not made to tone and fix more than there is gold sufficient, that is, after it is too nearly exhausted, will give prints as permanent as any other bath whether combined or separate. The formula is as follows:

Sodium hyposulphate	2 ounces
Water	16 ounces
Gold chloride	2 grains

Mix in the above order and let stand for twenty-four hours before using. This quantity will tone and fix perfectly fifty-six 4x5 prints, and the only fault connected with the bath is that it will continue to give fine tones long after the gold has become exhausted and as prints so toned are far from permanent the bath has got a bad name. An article giving much information concerning the bath and how best to use it will be found on page 492 of our volume for 1898; the November.

STUDY HEAD.

Jeanne E. Bennett.
Salon Club of America.

THE
AMERICAN AMATEUR PHOTOGRAPHER.

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CANDLELIGHT PHOTOGRAPHY

BY JOHN BENTLY.

TWO or three months ago there appeared in some of our British contemporaries a series of photographs under the above title, and the illusion, as of course illusion it was, was wonderfully perfect; puzzling even the expert, who, knowing the actinism of the flame of a candle, knew that some other source of illumination had been employed, but what that source or how employed he could not say. The author of the examples reproduced was interviewed, but although pleased to exhibit many more specimens, unamateur-like, refused to give any information as to the method of their production.

Various methods were suggested, all more or less wide off the mark until Mr. Bently tried his hand at it with the following result, which we copy from *The Photographic News* as being

at least as successful as the original; and as not the first inventor but the first to publish deserves the credit, it will be known as the "Bently method."

"Candle-light" pictures are now attracting a considerable amount of attention, and the object of the present article is to show that such pictures may be produced by any intelligent worker by means of common-place and inexpensive materials, and with scarcely any addition to the outfit of the ordinary amateur. It is well to state that the writer has absolutely no knowledge of the methods employed by any other worker, but considers it probable that the method here set forth is identical in principle with that employed in the production of the pictures previously put before the public.

The following are the materials used

by the writer: Quarter-plate stand camera, with pneumatic release shutter stop $f/11$; iso plates; any ordinary developer; common candlestick, with candle lighted; shaded magnesium lamp, herein described; for each exposure, 5 in. magnesium ribbon, doubled to $2\frac{1}{2}$ in. and twisted together; dark curtain in line with camera and light, well away from the subject.

The easiest and most convenient method of working is to suspend the lamp over a table by a gas bracket having a vertical side, as shown in Fig. 4, so that it can be lowered to any position required without the slightest trouble. In order to obtain the shadows at a proper angle from the flame of the candle, the strip of magnesium

To prevent the magnesium light bursting out below the screen, its lowest point must be one inch above the bot-

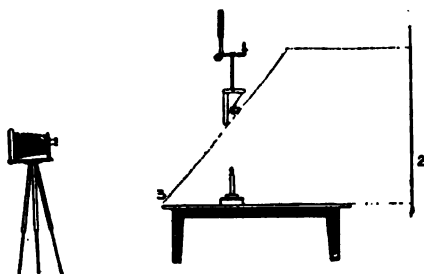


Fig. 4.

1.—Gas bracket over table to which lamp may be attached. 2. Black curtain or screen of any kind to be in direct line from the shaded lamp and the camera; the black screen may be any distance away. 3. Dotted line simply to show the view covered by the magnesium light.

tom margin of the lamp screen (Figs. 2 and 3).

No light object must be placed between the lamp and the dark curtain on the opposite side of the room, or the outline of the lamp shade would be at once revealed.

To focus properly, it will be necessary to place the lighted candle at the position to be occupied by the sitter temporarily for the purpose, as it might otherwise happen that the sitter would be out of focus. When all is arranged for an exposure, hold the bulb release in one hand while the tip of the magnesium is lighted by a taper with the other hand, being careful not to disturb the shaded lamp or the flame of the candle in doing so. The exposure will be about two and a half seconds. I may say that rapid plates are an absolute necessity, as, with an exposure of, say, six seconds, the white smoke from the magnesium would escape off the sides of the lamp, and a dense white cloud would be

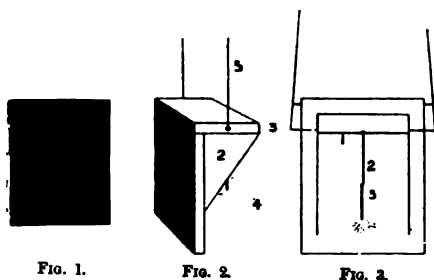


Fig. 1.

Fig. 2.

Fig. 3.

FIG. 1.—Back view of box, 7 by 5 in., facing camera.

FIG. 2.—Side View. 1. Back, dead black paper. 2. Cardboard box, lower part cut away. 3. Hollow cardboard box lid. 4. Magnesium ribbon, 5 in. doubled to $2\frac{1}{2}$ in. 5. Thin wire or black string to hang up by.

FIG. 3.—Inside view of shaded lamp facing the objects to be photographed. 1. Cross wire. 2. Wire for suspending the magnesium ribbon. 3. Ribbon.

must be perfectly perpendicular to the candle, and as near to the actual point of its flame as possible, care being taken that the point does not disappear behind the back screen of the lamp. To prevent this, have the wick of the candle cut down close to the wax immediately before making the exposure.

the result, and would, of course, spoil the effect.

If it is desired to produce the whole of the surroundings in the picture, the exposure should be made by daylight with the blinds drawn, care being taken to place the black side of the lamp (Fig. 1) away from the light of the windows, and that the outline of the lamp does not fall on any light object, but on a dark curtain or screen placed for the purpose.

Suggestions for a more elaborate form of lamp will, no doubt, occur to each worker. A smaller size of lamp screen might possibly serve if a larger stop be used and half the exposure stated be given.

It will be observed that the shaded lamp is in full view in the field covered by the camera, thus enabling the shadows to be cast at a fairly accurate angle from the actual flame of the candle.

"GUESS WHAT IT IS" PHOTOGRAPHY.

BY B. F. FLORA.

YEARS ago, when it was discovered that rays of light could be made to record the image of a person on paper, the event was regarded as something wonderful; and the man who made the discovery was hailed as a great genius. The fact that a man could pose before a camera, and have that instrument picture even to the minutest detail every expression of the countenance, was considered but little short of a miracle. In modern times, the man that can manipulate the results of this same discovery in such a manner as to produce hazy, indistinct, and unnatural images, is termed by some people a great artist, and his achievements beyond the ability of the ordinary professional or amateur photographer. Indeed the picture that shows up things in their true light, with clear outline and full detail, so that there is no possibility of a chance

to hazard a guess on the identity of the subject, is branded by the modern standard as vulgar and inartistic. Such are the thoughts that came to me recently while perusing a copy of *THE AMERICAN AMATEUR PHOTOGRAPHER*; when I saw therein a picture entitled "Shoveling Snow." This picture had evidently been exhibited by the Cleveland Camera Club, and no doubt is a very fine specimen of "Art (?) in Photography." During my few years slavery to the camera habit I have tried to see the artistic side of it as set forth by those who have raised the standard of artistic excellence; consequently I studied this picture long and hard.

"Shoveling Snow." What a beautiful title! I thought of the many cold winter days in the past when I had come in contact with the beautiful in the capacity of snow shoveler, and it occurred to me that this picture would

enable me to again live over the snowy days of the past. But when I turned my attention to the picture I failed to see a representation of any snow that needed shoveling; and I really felt very bad about it. I know the snow is there because the title of the picture says so, and just to think that I haven't enough artistic sense to see it. I looked for the shovels; but with the same result, not a shovel in sight. Strange indeed, that I could not see them when I knew they were there, because people don't shovel snow with pitchforks; but I think my artistic sense is gaining and I will surely be able to see the shovelers. Yes, I see them, three men; yet I am not sure, the fourth one seems to be only a shadow. I guess there are only two shovelers, one man seems to be on the wagon, and as the title don't say how many, I will let it go at two. One of these looks like an awful big black shadow, but I know he is a snow shoveler because I can see something that looks like a hat and two big feet. Snow shovelers have big feet. And there is the wagon into which they are shoveling the snow. I don't see any snow in the wagon, but I know it is in there, because that is what the wagon is for; and besides, there is something in the back end of the wagon that looks like coal, but it is not coal. I think it is rock that is piled in the back of the wagon to keep the snow from falling out. I guess the snow shovelers forgot the end gate of the wagon and left it at home. There are two horses hitched to the wagon to haul the snow. I can't see but one, but I know there

are two because one horse could not haul a big wagon like that. I guess what I see is a horse. I know it is because its back bends the wrong way for a dromedary. The horse has some snow on its back, more than seems to be on the ground, but I guess that is because the shovelers have taken it all off the ground. The more I look at this picture the more I don't like it. As the Indian said about the weather, "It gets no better mighty fast"; consequently I suppose there is no hope for me ever to be able to appreciate art. After all, what is art?

So earnest is my zeal in camera work, that often on Sunday when the preacher says I ought to be at church, I can be seen dodging through some back alley, making for the woods with my camera, there to enjoy the beauties of nature and make pictures of the brook, the trees and flowers as I see them. I notice in one of the late popular magazines, illustrations that I think are the finest I ever saw in that line of work. Everything clear, crisp, and distinct. No guess work, scarcely any need for a title, and when I look upon these scenes I become oblivious of my surroundings, stand where the artist stood and see things as they appear in nature; yet such life-like reproductions are styled by some as only vulgar and inartistic facts. I look at a picture on exhibition entitled "Hill Pastures"; I can't tell whether it is hills or hay stacks that I am looking at. I see a few blurred spots that I should guess were meant to represent sheep, and this is called fine art. Again I ask, what does this art fad amount to

PENSIVE.

Jeanne E. Bennett.
Salon Club of America.

in photography? Art as I understand it is the adaption of things in the natural world to the uses of life. Of what use to life in the natural world is a picture so smirched and blurred that almost every semblance of the original subject is obliterated? I am familiar with all such talk as being educated to appreciate art, but I am still of the opinion that even an untutored savage knows whether or not a picture looks like the thing it is intended to represent.

I would not have any one think that I am opposed to education, on the contrary, I am very enthusiastic on that subject. The trouble is that sometimes education leads in the wrong direction. I am reminded of that fact when I call to mind the time when I tried to educate myself to like smoking, and ever since I have been very much opposed to learning to like things that were worse than useless. I suppose most any one might in time learn to like these meaningless blurs called artistic photographs, but why should they? It's all right if people enjoy that sort of thing, and want to keep up a class of that kind, but why say "We are the only true photographers, and you fellows of the correct focus class do not know anything about art in photography." It may seem like a bold thing for me, an amateur, to criticise the actions of these self-styled artists, but when I

see a picture such as "Shoveling Snow," my blood boils and I feel like entering a protest against what I think is not true photography. And I believe there are many others in the same boat. Much has been said about photography as an art, but if it has to be doctored in order to bring it up to some people's idea of art, they would better take it from their list of artistic accomplishments and call it plain photography.

B. F. FLORA.

[We have often said that we see in a picture what we bring to it, and the secret of our correspondent's discontent is at least indicated in his definition of art as being "the adaption of things in the natural world to the uses of life." He brings to a photograph or picture the desire to see only the "record of fact," and not seeing everything "clear, crisp and distinct" as no eye ever saw them, is dissatisfied. But although "record of fact" or a copy of a natural scene is not art, it is very beautiful and gives pleasure perhaps to hundreds where the same scene rendered so as to be truly a work of art would be appreciated only by tens. There is a wide difference between the "liberal arts" that our correspondent understands and "fine art" which he cannot appreciate; but there is room enough for both.—EDS.]

CHRISTMAS CAROLS.

**Louis Fleckenstein,
Saron Club of America.**

THE THREE FACTORS IN AMERICAN PICTORIAL PHOTOGRAPHY.

BY ROLAND ROOD.

[While holding and teaching what, in our opinion is the right on all debatable questions, we are at the same time anxious that our readers should see both sides and consequently open our pages to correspondents with whom, as in the present case, we do not agree. Without going further into the question, we may say that in the following article Mr. Rood very much under estimates the work of Mr. Steiglitz, and if possible in a greater degree over estimates the work of Mr. Hartman.—EDS.]

PICTORIAL PHOTOGRAPHY has come to be of such importance in our lives, both as a means of culture, as well as an esthetic pleasure, that it would be very interesting to determine to what and whom its development owes the greatest credit. When we examine we find many causes: an army of photographers, both professional and amateur, numbers of indefatigable editors, a few—very few—intelligent art critics, and a not altogether over appreciative public. The struggle has not been a long one, but a hard one. The photographers have done excellent work and made gigantic strides, but the public has failed and still fails to entirely understand, and the art critics, who might have helped to explain, have shown that usual lack of intelligence which so frequently distinguishes them, and have, with few exceptions, looked upon the movement with apathy.

But through all this I distinctly see three notes, powerful in their significance, three factors that have played an all important part. They are Alfred Steiglitz, Rudolf Eicke-

meyer and Sadakichi Hartmann. To these three men the movement today owes its existence. To take away any one of them would mean to lose years of what has been done. Their untiring efforts, singularly individual, but concentrated on one point, have evolved an art and forced a breach through that barrier of ignorance with which even the most cultured were surrounded. They have toiled like giants, and their labors are now beginning to be crowned with a little success. A few comments on the part each has played will be to the point.

The position Leonardo da Vinci held in the world of painting is, to a considerable extent, the one Steiglitz holds in this smaller world of photography. Like Leonardo, he has fanatically striven after the unattainable, he has attempted to discover the unknowable, but the transcendental road he has travelled is marked with many discoveries, triumphs of art and science. He is the first who photographed the night, he is the first who accomplished the task of composing figures into pictorial compositions. He foreshadowed the discovery of many

Stieglitz has come before his time; no, he came at exactly the right moment when the art was in its most degraded state, when an idealist was needed to show the path out of the mud. He gave the direction to the movement.

The second factor, Eickemeyer, beautiful artist, reminds me more of Titian than does any other worker, either of the camera or the brush. Like Titian, he possesses a great sense of beauty, and of the meaning of surfaces of things. His portraits of women are unexcelled, frequently unequaled, by any other photographer in purity of flesh tones, sculpturesque chiseling and dignity of pose. His landscapes (and he is the American master in that art) express the serene soul of nature. And also like Titian, he has filled his pockets with gold. He

Portrait of Alfred Stieglitz,
By Frank Eugene.

of the processes of manipulation, etc. Like the great Italian, he has never paused, but for brief moments, to enjoy the fruit of his successes; he has rarely stopped to repeat and enlarge upon any achievement, but has always followed that guiding star that was visible to no eyes but his. He has called upon others to come after him, and when their faltering steps have failed and led them into side paths, he has not hesitated, but has continued ascending, wrapt in his ideals. Steiglitz is *par excellence* the high apostle of the photographic art. However, the influence of such a man is necessarily felt by few, and it is upon these few, who worship him and partially understand, that his influence has been most valuable. I would not say that

Portrait of Rudolf Eickemeyer, Jr.,
By Campbell Art Co.

the teacher, but he pleases us and we are appreciative, we understand and love him.

Sadakichi Hartmann, the third factor, reminds me of no one I have ever seen or heard of, he is unlike any other human being. Born aristocrat, driven from home, turned globe trotter, one-time social lion in Boston, drudging journalist, playwright, painter, lecturer, art critic, poet, he knows all mankind, he has led all lives. He has taken his die from the countless phases he has passed through, he has gathered acumen from every man and woman he has known in his erratic career; he is made of all schools of ethics and thought. It is needless to say that his mental calibre is large, and his art criticisms are on a par with those of Ruskin and Taine. It is still more needless to say that when he lent his pen to the photographic movement he helped it as no other man could. He was the first art critic who realized the possibility of photography being developed into a fine art. His were the first pictorial criticisms in the photographic world. It was Hartmann who conceived the idea of writing about a photographer as an individuality. What Hamerton did for etchers, Hartmann did for photographers. His first series of Stieglitz, Kasebier, White, Eickemeyer, Keiley, Day and Eugene (which latter one Hartmann discovered) gave a new note to the art world, and was imitated in England by Bernard Shaw. If it had not been for Hartmann many of these and others, too, would never have been heard of, most of them would have

Portrait of Sadakichi Hartmann,
By Rudolf Eickemeyer, Jr.

has influenced and elevated all the other photographers on Fifth Avenue. His picture called "The Dance" is a veritable *tone de force*, and the first in which five figures are successfully grouped and co-related. It was he who first introduced photographs as illustrations to literary articles in magazines. It was he who first published photographs in book form at popular prices, selling them by the thousands, thus making high art known to the public. We are all familiar with his books: "In and Out the Nursery," "On the Old Farm," "Down South"; we have all enjoyed them, but how many of us have thought of the effort the art has cost him, of all the toil and labor! No! that is not his object, his mechanism of construction is hidden, he is not

Portrait of Curtis Bell,
By J. C. Strauss, St. Louis.

been forgotten. He came between these artists and the art loving public, he explained to the public, he brought them appreciation, he gave them courage. Hartmann fought their battles when all other art critics passed by, or at best scoffed.

But with all the efforts of these three men, the work is not finished. Photography is acknowledged to be a fine art by but a limited public; the world at large, even including most painters, heed it not. There is still work to be done, *all* the cultured public must be taught to understand, and the painters must open the doors of their exhibition halls to the sister art. Who is to do this work? I can not answer, as I am only an outsider in

photographic matters. I notice, however, that there is a new movement afoot, headed by Mr. Curtis Bell, which aims to bring about an affiliation of the leading photographic societies and pictorialists, and to popularize their work by practical and hitherto unemployed methods. Whether this new movement will be crowned with success or not, is difficult to predict. The work of Curtis Bell has frequently graced the walls of exhibitions and is marked by quiet dignity and perfect technique, but if he accomplishes the task to which he has set himself his name will need no other claim to fame. As an organizer he has shown great power and sound judgment and he has enrolled under his banner many able lieutenants. If the parties concerned live up to only one-half of what they promise, something like a new era of pictorial photography will be ushered in.

The final outcome, no doubt, will be much hastened if all those interested in the movement will stand by each other and not let petty jealousies or personal differences produce those frictions that have so damaged the cause of the painters. Let the photographers take a lesson from the artists, let them remember that it is entirely owing to the miserable little ambitions and desires for self advancement of these same artists that today the American picture buying public deny them even the rank that Europe accords them.

I wish the photographers all success.

THE BRITISH JOURNAL OF PHOTOGRAPHY JUBILEE NUMBER.

THE Jubilee number of *The British Journal of Photography* has for me such an amount of personal interest that, however absurd the reason, I cannot resist the temptation to give it an article altogether to itself. Of the three dozen portraits reproduced I was more or less acquainted with at least a third, and the intercourse with a few of them, if I could get space to tell it, would be both amusing and interesting. The other two thirds I am glad to see, as of most of them much has been heard and it is always an advantage to be able to correct our previously formed impressions, even although the correction be sometimes disappointing.

During the early sixties (I write too far from home to look up dates), my laboratory at 21 Dundas Street, Edinburgh, was a kind of headquarters for those interested in photography, a class considerably different from the average amateur of today; and there came together such landmarks, if I may use the term, as Talbot, Brewster, Burnet, Ponton, Horatia Ross, Wilson, Walker, Davis, Tunny, Davidson, Bow, Piazzzi Smyth, Hallard, Marrick, Raven, etc., etc., all or most of them members of the Photographic Society of Scotland. And it was in consequence of certain features of that Society that the still energetic Edinburgh Photographic Society was formed. A number of the members of the older Society were also Fellows of the Royal Scottish Society of Arts or other like societies,

and knew that the discussions that generally followed papers that were read elicited more information than was generally given in the paper itself, and as, for some reason or other, such discussions rarely followed papers read before the old Society, there was considerable dissatisfaction. It was hinted that after papers by such big-wigs as Brewster and others like him no one cared to start a discussion, the result being that nothing beyond a vote of thanks to the reader was ever thought of, and some of us wanted something more.

The result was that at a meeting in the room behind J. T. Taylor's little watchmaker's shop on the South Bridge, the Edinburgh Photographic Society was founded, the date being February 20, 1861. There were present about ten, what would be here called "charter members," including Taylor, Burns, Slight, Davies, Ramage, Muir, Valentine, of Dundee, etc., of whom, so far as I know, only Slight and myself remain. J. D. Marrick, then Edinburgh City Clerk, now Sir James, and late Glasgow City Clerk, was the first president, and the Society started with a degree of energy that it has never lost, having always been and still is one of the most energetic in Britain.

The British Journal of Photography became the organ of the Society, for a time, indeed, said so on its title page, and the members were supplied with it at a reduced rate. The Journals came in a bundle to Taylor, who distributed it and col-

COMIN' THRO' THE RYE.

Louis Fleckenstein.
Salon Club of America

lected the subscriptions as a labor of love. This I mention as it gives an opportunity of recording an incident showing a phase of the character of Greenwood, its proprietor, between whom and myself there existed the warmest friendship for many years. On Taylor's removal to London to occupy the editorial chair, the distribution of the journal and collection of the subscriptions was transferred to me on the same terms, Greenwood coming to Edinburgh once a quarter in connection with his ordinary business, but receiving my collections as a sideshow. His visits were looked forward to with pleasure by the leading members of the Society, as they meant at least one merry evening with mirth and wit and humor, he being full to overflowing with all three.

It so happened that there had been one subscription that Taylor had been unable to collect. Galloway, I remember was the name, and by the time I took charge he had left the city. On Greenwood's next visit he seemed to feel the loss as much as if it had been a fortune and pleaded with me to pay it, partly for the credit of the Society, but more especially from the fact that he had never lost a penny in Edinburgh and wished to boast of it when in other cities. Of course I could not see it in that light, and doing the business as a labor of love, there was nothing morally or legally requiring me so to do. Well, after spending more time in argument than the thing was worth, and eating a lunch at his expense, costing nearly half the amount of the sum in dispute, he suddenly asked the number of

"boys" in the council, and on my saying about a dozen he sprang the following upon me, and those that knew him intimately will know that it was just like him, "Look here, Nicol, I shall not leave Edinburgh with an unpaid subscription. Pay me Galloway's"—I think it was about eight shillings—"£1.92. I'll ring for the waiter"—we were lunching in the London, where he generally put up—"order as good a dinner as you like for all or as many of the council as you like and I'll pay the bill." And so it was, and we had a night that was not easily forgot. Eleven sat down, and I learned afterwards that to secure a payment of about \$1.92, he willingly parted with \$17.17, but he gained his point, and to do that had been and was his aim through life. He was what in Scotland is called "a rough type," but he had a warm sympathetic heart, an open hand where it was deserved or could do good, and was a true friend.

With Taylor, too, I kept up a close correspondence up to the time of his death, and in view of the claims that have recently been made as to his having joined the ranks of the spiritualists, it may be of interest to record an incident that occurred shortly after he left London for New York. About that time I was one of ten who were holding weekly meetings in a vain search for evidence of the truth of spiritualism, and although all were open minded and some anxious to believe, and having the help of several mediums, including Duguid of Glasgow, the evidence did not eventuate. One of the "anxious to believe," a

friend on a visit from India, with wealth equal to his credulity, on reading in an American newspaper a glowing account of the success of an American photo-medium in getting into his pictures the departed spirits of his setters friends, started at once for New York in the hope of again seeing his recently deceased wife. And he was not disappointed. In less than a month he returned with a poor photograph, *cart* size, of himself, and looking over his shoulder an over-exposed figure of a woman, flat but full of detail, in which he instantly recognized his late wife, and almost quarreled with his grown up daughter because she could not so see it.

And now comes the pith of the story. Within a few days after the return of our Indian friend, now a confirmed spiritualist, I received a letter from Taylor who, with a friend, had visited the same photo-medium and got, not a deceased friend of either, but what the medium called "one of his controls," and which contained a copy of the said photograph; and even a cursory examination of the two, the print got by our Indian friend and that sent by Taylor, showed unmistakably that both "spirit photographs" had been printed *from the same negative*.

But this is aside from the Jubilee number about which I meant to write. Well, nothing that I have seen for many a day has given me so much pleasure. Many of the faces; altered, ah! how much since I last saw them; recalls incidents long forgotten, but delightful when recalled. To those who, like myself, were deeply dab-

bling in photography when the B. J., under its baby name, had its birth, it is an epitome of its progress, and a reminder of difficulties surmounted; to such as entered the lists in later years it should be a source of encouragement; and to every photographer, and many non-photographers, its thirty-two pages should be instructive reading.

Where all, or so much, is good, it is difficult to select, but we must thank T. C. Hepworth for, in his article on "Journalistic Photography," giving credit to American magazines for superiority in the production of half-tone blocks. Everitt gives much useful information anent lenses; my old friend Henderson writes of ceramic photography but, as usual, fails to say just how he produced his own, certainly the best that ever left muffle; and Emerson, well, he is as egotistical as ever, but has "the courage of his opinion" to an extent that enables him to repeat the mistake of speaking disrespectfully of "gum," and saying that it is dead while he knows right well that it is daily gaining in popularity, and that in the rooms of the Royal, of which he is an office bearer, there is while I write an excellent exhibition altogether given over to it.

But the ointment is little the worse of the fly, and the B. J. Jubilee number should be a precious possession to all interested in photography.

There is one thing more that I feel a desire to set right. E. J. Wall, in speaking of "camera evolution," says, "Then came the Kinnear or conical bellows, made first, I believe, by Meagher in 1861," but if any name is

to be given to that at one time popular camera it should be Thompson.

Sometime in the late fifties, Tom McKinley, a young man from Liverpool, on a visit to his parents at Trinity, called on me in connection with photography, and my attention was attracted to a rudely constructed camera he carried, because it was the first bellows that I had seen. Although very unlike the, as after known, Kinnear's. The description I was able to give of it to my friend Alexander Thompson, late Principal of the Merchant's Company's School in George Square, but then teacher in Dr. Guthrie's ragged school, set him a thinking and constructing, the outcome being the original model of the camera in question; he and I being joint owners, I having found the

material and he the invention and construction. We used the camera a good deal, and it had so many advantages over previous landscape cameras that Kinnear, then one of Edinburgh's leading architects, desiring to have one like it, showed it to James Bryson, then one of Edinburgh's leading opticians and instrument makers, who copied it and in a most workmanlike manner. Kinnear showed it at a meeting of the Photographic Society of Scotland and a second was made for the Rev. D. T. K. Drummond, who, I believe, in his own genial way, was the first to name it the "Kinnear Camera." That Meagher afterwards turned out many such cameras I know, but not until they were well known in Scotland, at least five being regularly used in Edinburgh.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

THE possibilities of radium are increasing faster than they can be comprehended or even considered, even reaching into the impossibilities, as may be seen from the following paragraph which I clip from *The British Journal of Photography*:

A radium clock, which will keep time indefinitely, is the latest wonder. The principle of this apparatus is simplicity itself, the registration of time being made in two-minute beats, whilst its function is to exhibit the dissipation of negatively-charged alpha and beta rays by radium. The

clock comprises a small tube, in which is placed a minute quantity of radium supported in an exhausted glass vessel by a quartz rod. To the lower end of the tube, which is coloured violet by the action of the radium, an electroscope formed of two long leaves or strips of silver is attached. A charge of electricity in which there are no beta rays is transmitted through the activity of the radium into the leaves, and the latter thereby expand until they touch the sides of the vessel, connected to earth by wires, which instantly conduct the electric charge, and the leaves fall to-

gether. This simple operation is repeated incessantly every two minutes until the radium is exhausted, which in this instance it is computed will occupy thirty thousand years.

A "minute quantity" of radium that will keep strips of silver opening and shutting every two minutes for thirty thousand years is surely as near and even nearer to perpetual motion than ever sane and sensible men expected to get.

* * *

How long are photographers to mislead themselves by misunderstanding the object of the optician in listing his lenses? I am induced to recur to this subject again by a sentence in an article by Harry L. Shepherd in a recent number of *Camera Craft*. In speaking of Gorez double anastigmat he says, "The focal length of this series is shorter than I would care to use, for example, *the lens for a 4 x 5 plate is only 6 inches.*" The italics are mine, intended to emphasize the part of the statement in which lies the mistake.

Taking good correction for granted, the triumph of the optician is the largest possible covering power with the largest possible working aperture; and in saying, as is done in the first list I take from my shelf and on the first page I open, that No. 4 of $7\frac{7}{8}$ equivalent focus covers sharply a plate of 7 x 5 at $f/5.6$ and of 7 x 9 at $f/32$, he does not mean that the lens should be employed on those sizes, but only that it will cover them if so used. The optician does not concern himself with picture-making or the angles best conducive thereunto, but

takes it for granted that the photographer can, as he ought to, arrange that for himself; and therefore it is absurd to speak or write of lenses by their covering power as 4 x 5's, 10 x 8's, or any other size, or indeed in any other way than by their most important function, their focal length. Then, and not till then, will photographers learn and put the learning into practice, that unless under special conditions, pictorial work requires lenses not less than the diagonal of the plate on which they are employed, and that once and a half or twice the length of the longest way of the plate is very much better.

* * *

We are likely soon to see a novelty in post-cards under the title of "The Magic," at least it is said that applications for patents are being made in several countries including America, although what part of it can be patented it is hard to say, in this country at least, as it is neither more nor less than the Anaglyph frequently noticed in these pages and patented in 1891 by that Nestor in color photography. Louis Ducos du Hauron. In the post-card it appears as a colored disc which on closer examination seems something like a double exposure, but on examination with or through colored glass or gelatine, a different color for each eye, is resolved into a perfect picture or print with true stereoscopic effect. The production of such cards are well within the ability of most amateurs so that they will soon become popular and may help the reincarnation of the stereoscopic camera.

One of the strangest things that I have seen for long is the advertising as one of the good qualities of a lens the statement that "it has a shorter focus than any other lens of similar character." What will our editors, or indeed any others who know the evil of using lenses of too short focus, say to this? That the necessity for lenses of long enough focus is no new thing may be known from the fact that as early as 1861 Sir David Brewster, at a meeting of The Photographic Society of Scotland, said that the inherent faults of most of the professional portraits then were due to the placing of the sitter too near the lens; prominent objects such as the hands, nose, etc., in front of the point focussed were enlarged, often to a disagreeable extent, all of which would be obviated by placing the model at a suitable distance, as the more parallel the rays the more perfect would be the picture. Our editors have preached the same doctrine in season and out of season, and most of the best and most successful professions have again and again declared that a portrait lens should not be shorter than twice the length of the longest way of the plate. From all this it should be evident that a short focus lens, while useful in certain positions when it is impossible to get far enough from the subject, is also a good thing to let alone unless in such rarely occurring cases.

* * *

Department Store Photography is not confined to America and seems to rouse the ire of German photograph-

ers as much as it does that of their American brethren. Like their American brethren, too, they, instead of trying to retain their trade by doing better than the stores, attempted to enlist the government into an appreciation of their grievance by asking the Minister of Commerce to make some kind of enquiry into the matter, but, of course, without success.

The State Association of German Photographers then determined to ascertain for itself much that it wanted to know, although with what object it would be hard to tell, and the following is the most important information obtained:

Of the question sheets which were sent out to business houses, 49 with answers were returned from 18 towns, whilst of those sent to employes at the departments of stores 160 were returned answered.

The 49 stores in question had in their photographic departments 309 employes, of whom 57 were operators, 85 retouchers, 63 printers, and 24 general assistants; 46 were employed as helps, and there were 8 apprentices. The number of women engaged was 95. The average hours of work were 10, exclusive of breaks, and $8\frac{1}{2}$, 9, and $9\frac{1}{2}$ hours were only exceptional instances. The term of notice was generally a fortnight, and in only 10 to 12 cases was a month's notice usually given. Few fines were inflicted, and then only for lateness. The answer to the question "How many portraits are taken daily?" was not answered with much exactness. As far as could be ascertained, about 735 portraits were taken daily in the

49 businesses, and the average for each would be 15. But the number of portraits taken in each studio is very different; for instance, one house in Berlin, on an average, takes 120 portraits daily, whilst in other small businesses only about 8 are taken. The minimum prices for cartes-de-visite and cabinets is 1s. 9d. to 1s. 11d. and 4s. 6d. to 4s. 9d. per dozen, respectively. The maximum prices vary considerably, and range from 6s. to 8s. for cartes-de-visite and 12s. to 18s. for cabinets. In a few establishments the receptionists are paid premiums

for securing higher prices and large orders.

The average hours of work by assistants is nine, and the average salary said to be \$26.40 per month, but surely that must be to those boarding in the house. The closing sentence in the article from which we get the information is "This offers a splendid basis for further action"; but what action can be taken? The days of trade guilds are gone, never to return, and as has been already said in these "Words," photography is free, and always will be, "free for all."

NOTES

PHOTOGRAPHING BY THE LUMINOSITY OF RADIUM.—From a report of a meeting of the Royal Photographic Society we learn that Mr. W. Sparrow, of Eastbourne, has succeeded in printing lantern slides by the light emitted by radium, so small a quantity as is found in a Crook's Spinthariscopes having been employed. The slides were shown on the screen. This may not have been the first practical application of radium as a source of light for the purpose, but it is the first that has attracted our attention.

REVERSED PRINTS.—Those who make reversed negatives for carbon printing by single transfer occasionally want a straight print from the same, and according to a correspondent of *The Amateur Photographer*, may make it as follows, with the smallest possible trouble and as good as if printed from the negative in the regular way: It is simply

the employment of light passing through a lens, such rays being nearly enough to parallel to print *through* the glass without visible blur. The most convenient way is to fix an ordinary lens, that with which the negative was made being as good as any other, in the end of a box, any ordinary packing will do, and lay the printing frame with the glass side of the negative next to the paper inside the other end, the end with the lens being turned to the sky or the light. The only conditions are that the disc of light made by the lens shall be large enough to completely surround the frame, keeping in mind that the larger the disc the longer will be the exposure.

LEUCO DYES are dyes that from white change to color under the influence of light, and Drs. König and Homolka, scientists in the firm of the celebrated dye makers Meister, Lucius,

and Bruning, of Germany, who have already given us so many color sensitizers, have discovered three which turn to brilliant red, yellow and blue, that are likely to play an important part in the future of tri-chromatic photography. Dissolved in collodion, the colors are produced at the expense of the nitro group of the pyroxyline by oxidation; and of course, the colorless collodion may be coated on paper or celluloid films, rendering unnecessary the usual method of staining them. The sensitiveness is said to be greater than that of ordinary collodion paper and the stability of the so-formed colors equal to that of the ferro-prussiate or blue print image, requiring only treatment with dilute acid for fixation.

As we understand it, the process is still in the experimental stage, but enough is already known to warrant us in saying that it is pregnant with great results in connection with color photography.

ANOTHER THREE-COLOR METHOD, or perhaps we should say a simpler modification of an old one, the du Hauron-Jolly-McDonough, of which so much was promised and so little accomplished. The M. M. Lumière have taken it in hand, and briefly, begin by placing the color screen or a substitute therefor on the plate where it remains a fixture and ultimately serves as the viewing screen. This they isolate by a coat of varnish, and on that spread the emulsion. The exposure is made through the glass and the developed negative is converted into a positive which, seen through

the screen, appears in all the colors of nature.

The screen consists of the highly translucent starch granules, the starch from the potato being preferred, colored red, green, and blue-violet, producing the three primary color sensations, evenly distributed over the plate, although just how that is managed has not yet been told. The negative image first developed is dissolved, the remaining unacted on silver bromide exposed to light and developed with a positive in the ordinary way, and that is all.

The trouble with the Jolly-McDonough method hitherto has been the production on a commercial scale of a suitable screen; and as the right hands of the brothers Lumière have frequently showed their cunning in more difficult undertakings, we are likely to hear more of this promising method of tri-chromatic photography.

A NEW METHOD OF MOUNTING PRINTS.—The Messrs. Bayer have introduced a new method of mounting prints, demonstrated by M. Lobel at a meeting of the French Photographic Society. A very fine powder—"*colle en poudre*"—contained in a wide-mouth bottle with a sieve-like top, is evenly dusted over the moist print which is then laid on the mount and rubbed down in the ordinary way.

ALFRED STIEGLITZ.—No one interested in pictorial photography, or who knows what he has done for it, can read the following note recently received from Mr. Stieglitz without deeply sympathizing with him in his trouble and disappointment:

"Here I am in Berlin in a private

hospital, paying the penalty for ten years of incessant strenuousness. I came over here for a rest and pleasure, but on my arrival collapsed completely and am now undergoing a rest-cure which implies absolute quiet all summer. And I had looked forward to a European trip for years, only to be imprisoned. I do not think I deserve it, do you? But if I regain some of my strength I won't complain. I'll try to husband it in the future. Over-conscientiousness doesn't pay."

CLOUD PHOTOGRAPHY. — Speaking of cloud photography, John A. Hodges has the following to say regarding the use of orthochromatic plates:

One element which is essential to success is the use of isochromatic plates. In these days of competitive journalism one frequently comes across advice that is very misleading, and the statement is sometimes made in print that an ordinary plate is as suitable as an isochromatic plate for work of this character. Although it is quite conceivable that under certain specific conditions an ordinary or non-isochromatic plate might give a very good result, it is equally true that in many other instances it would utterly and hopelessly fail in giving an approximately truthful rendering. Moreover, there is this advantage in using an isochromatic plate: that in a case where its employment would not be imperative, it would give a result at least as good, and probably better, than an ordinary plate, and in all other cases the advantages would be incomparably greater.

I should like to make the necessity

for the use of isochromatic plates still more apparent, if I can, because so many people are still deterred from using them on account of purely imaginary difficulties in their manipulation. I say "purely imaginary difficulties" quite advisedly, because the only essential difference between their manipulation and that which would be accorded to ordinary plates is in the nature of the dark-room illumination, which must be ruby and not orange, and perhaps to this precaution may be added the further one of avoiding the use of a developer in which ammonia is used as the accelerator. The red light is necessary because the plates are sensitive to, and would be fogged by, a yellow one, and the employment of ammonia has often been found to have a tendency to produce foggy images.

Now, as regards the desirability of using isochromatic plates, let us consider for a moment the nature of the work which it is proposed to undertake. In many instances when photographing skies we have to deal with color, often in most gorgeous contrast and variety. Now the shortcomings of the ordinary plate, in the translation of color into monochrome are, we presume, all too obvious to even the most unobservant worker. It is not sufficient, if we are aiming at anything even approximating to a truthful rendering of the effect we are endeavoring to reproduce in our cloud photograph, to secure a negative which, while it reproduces the form, or outlines, of the clouds with fidelity and truth, gives an entirely false rendering of their color value and tonality.

SOME POINTS CONNECTED WITH LANDSCAPE THREE-COLOR PHOTOGRAPHS.

(*The Sixth Traill-Taylor Memorial Lecture.*)

BY SIR W. DE W. ABNEY.

[Although three-color photography may be said to be in the air, it has not yet reached that stage of popularity or simplicity at which the amateur generally can take it in hand; indeed it may be said, so far as real success is concerned, to be confined to the photographer who is also a scientist. But it is simply a question of time when it shall be as popular as platinum printing; and as one of the most important contributions towards that end we gladly reproduce the following lecture by one of the foremost exponents of the method, and for which we are indebted to *The Photographic Journal*, the organ of The Royal Photographic Society of Great Britain.—Eds.]

I feel to-night that I am following illustrious lecturers, and can scarcely hope to arouse the same interest in the subject I have chosen as they aroused in theirs. However, what I have chosen is one which is of importance at the present day, and I make no apology for talking about it. Three-color photography is a most interesting research of applied science, opening vistas in the future, and I may say it calls for a study of pure science, which is difficult in parts, since it has to take into account physiological phenomena.

The main principles of three-color photography are well known, but I doubt much whether anybody who has not studied it and tried it under varying conditions of light, has ever fully realized how much remains to be done to simplify it, and make it thoroughly practicable in the hands of the practical photographer. It may be said, I think, with some truth, that up to the present time the main work done by it has been still-life, and the copying of pictures. It has been but little applied to portraiture (though under proper conditions this is not more difficult to undertake than still-life) or landscape work. It is in this last that difficulties perhaps arise which are not to be encountered in other lines of photography. We have in it the old difficulties of wet-plate photography due to varying light and shade during exposure, and where three exposures are made for one picture the chances are that the conditions are not quite the same during each exposure. Then there are the subtle

nuances of atmospheric effect which have to be rendered, together with the delicate and ever-varying tint of the sky. The colors have to be very exact in order to please, and at the same time an artistic effect is much to be desired. The question arises—Can these requirements be fulfilled?

The answer is that it can only be done if the greatest scientific exactitude is exercised in every particular. In the first place it must be determined as to the light in which a picture has to be viewed. If it be for a print, there is no possible question about it that it must be good daylight, and if we choose daylight, it should be that mixture of skylight and sunlight which is to be found in cloud-light, and which generally illuminates our rooms, when windows afford the entry for the light. We will therefore take it that for viewing a picture the light to be used must be daylight of this quality. It may appear that we are beginning at the wrong end of the subject; but this is not so. Because, before we can know how to produce prints, we must know what negatives are suitable, and before we know this we must know whether we can produce prints from them which will give the required accuracy. The only real test of the correctness of the three negatives is when the prints are first produced in black and white, and the color subsequently given to them. If a print is to be gauged on the depth of color it takes, according to the fancy of the amateur printer it must very seldom be correct, except by a lucky chance. When the shades are given by opacities through which the colored lights have to penetrate, then there is likely to be truth in the result.

This points to the true test for color negatives being the method of triple projection as devised by Ives, and I may say the more I have studied the subject, the more I am convinced that if a picture is produced correctly by this method, it is certainly a better guide for producing correct pictures by any other method. It is from this point of view that I have been working, and I think it will be found by others, as well as myself, that certain preliminary considerations are necessary.

I wish to introduce the subject by a simple

experiment. I cannot do better than commence by throwing on a small screen the image of a colored object, which must be correct, since it is formed by three spectrum colors. In the apparatus before you there is the power of throwing a patch of white or colored light upon a screen. It is white when the whole spectrum is combined, and it is colored when a small portion of the spectrum passes through a slit at the front. In fact, we have an image of one surface of the prism thrown on the screen by the lens in front. If on the prism I were to throw an image of any object, through the slit of the spectroscopic, which I have shown can be done readily, and is of use in photographing in monochromatic light such an object as the sun, we get on the screen an image in one color according to the position of the slit in the spectrum. If, instead of throwing an image of the sun, we place a lantern slide with colored glasses against the surface of the prism, we have an image of the slide. When we pass a slit through the spectrum we get the images of the glasses shown in monochrome, some being bright or dark, according to the absorption of these glasses. If I place three slits in the spectrum, one in the red, one in the green, and one in the blue, which rays when combined form white light, we still have the same colors as before, but less bright, owing to a large part of the spectrum being cut off. If the large lens is replaced by three lenses placed opposite the three slits we have three images of the small glass discs, one in red, one in green, and one in blue; and it is these sets of images which it is the aim of three-color photography to reproduce. We can choose our correct colors, which are best represented by the sensation colors, match the white of sunlight by the mixture of the three, and so reproduce the colors of the glasses.

We first have to produce the three negatives which would produce the transparencies like those I have shown you, but unbacked by color, for the color is added afterwards. To do this it is evident we must use screens or colored media to cut off all unnecessary colors. To use the spectrum themselves is, owing to the varied sensitiveness of the plates, almost impracticable. But the simplest way of doing this is to take colored pigments and photograph them, under certain conditions. It is necessary to know how much of each of the three standard colors is necessary to give, when mixed, the colors of the pigments. Owing to the different brightnesses of the colors and the difference in composition it is better to arrange that all the colors for

which (say) a red screen is sought, should have the same amount of red component in them when photographed. If the negative then shows equal densities when photographed through a red screen, it will show that the screen is correct; if not equal, the screen must be altered till it does. The screens must be selected by daylight exposure. In a paper I read before the Royal Photographic Society I showed how it was possible to prepare rotating colored sectors which should be available for selections of screens for all kinds of plates. There is one difficulty in the sectors, and that is the method by which the luminosity and color composition of the papers is arrived at. I wish to show you what I believe is a new plan by which not only the luminosity of the paper is arrived at, but also its composition in terms of the three colors used for projection. It is a very simple plan indeed, for it also tells us the spectrum color which, mixed with white, is the color of the screen. In the first place it is necessary to know the percentage composition of every spectrum color in terms of the three spectrum colors which we have selected already, and if we know this we can readily find the components of the pigment color in terms of these three spectrum colors. The diagram before you shows such percentage composition in terms of the colors which most nearly excite the three sensations.

In the original diagram of percentage composition in terms of the three sensations there is only one sensation which is excited by one color, and that is the red; the other colors excite two, and even three, sensations in a more or less degree, but from this diagram I have calculated what the percentage is when the colors alone are used, and we get the diagram before us (Fig. 1). I have left out the violet, for it

FIG. 1.

is composed of red and blue, and has no place as a simple color. This diagram is one of the starting points; the other is the luminosity of the spectrum with the inherent white deducted from its several parts. Suppose we wish to know all about this emerald-green paper, we proceed as follows:—

A color patch of white-light is thrown on the screen C by the lens L, and in the patch of the beam is placed a bundle of plain glass M, which deflects part of it at an angle of 45° , and the rest passes through. The deflected beam is again reflected by a silvered mirror M2, on the screen, so that the patch formed by it is superposed over

FIG. 2.

that formed by the direct beam. A rod R in the path causes two strips of light to be placed side by side. In one of the strips of light is placed the colored paper, and in the other white paper. A slit S is placed in the spectrum to allow only one color to fall on the two papers, and a rotating sector A or B, placed in one of the beams equalizes the brightness, the relative brightness of the two white beams having previously been equalized.

By noting the apertures of the sectors we find how much the colored paper reflects in comparison with that reflected from the white paper, and so we proceed with all the different rays. Fig 3 gives the curves obtained with yellow, blue and emerald green.

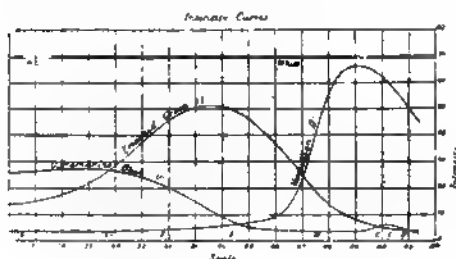


FIG. 3.

Knowing the luminosity of all the rays in the spectrum of white-light (Fig 4), we are able to arrive at the luminosity of these same rays in the pigment. We know the percentage composition of each ray, as already said, and we add all the red percentage together, as also the green and the

FIG. 4.

blue percentages. We know that in white-light there is so much red, green, and blue. We take, say, the color which will all be used up in making white and deduct the percentage of the two colors from what has been found, and we get a percentage remainder of two colors. We look at the diagram and find what color has that percentage, and it is that color which matches the color of the paper with the white light in it.

But we have also found the luminosity value of the color of the paper, and, calling that of white 100, we have now the true luminosity of the color of the paper. Again, as before said, we have the percentage composition of the color of the paper in terms of the three colors, and that gives us all we want in making the sensitometer.

I will not go further into the matter of making the sensitometer, since that is fully described in the paper I have alluded to. The novelty lies in the calculation.

The sectors before you have been prepared in this way, and the screens for any brand of plate can be found on the principles I have enumerated, for one rotating sector contains equal amounts of red, another of green, and the third of blue. The photographs of these rotating sectors should show the rings all of equal density when the screens are correct.

Be it remarked that the exposure need not be through only one medium. For the red negative, the exposure through a red medium may be given for a certain time, and through orange for a certain time. These separate exposures will enable us to arrive at a single color from which the screen may be made.

Having found the screens, we have next to find the relative exposure to be given. I have here three screens which I have used. They were prepared by Mr. Sanger Shepherd with his sensitometer, and they are good for the Cadett spectrum plates. Roughly, for a Cadett spectrum plate the exposures through three screens were: red 4, green 2, blue 1. When a fresh batch of plates is taken into use, a plate is placed in a dark slide with the screens in front, but in contact with this plate is placed a scale of gradation through which the light has to pass as well as through the three screens. A rotating cardboard sector is placed in front so that four times the light is admitted to the red, twice to the green, and three is admitted to the blue. The light used is the light coming through a small aperture in the wall of a dark-room, and it is light reflected either from the sun or from bright cloud light.

The exposures take place together, and the gradation enables one to find out any difference that exists in the supposed correct times of exposure. It may be noted that by placing three slits in front of the three screens, several exposures may be made on the same plate as a check. The densities of the negatives taken under the three screens can be measured, or prints taken and compared.

If the exposures were relatively 4, 2, 1, the densities of the bands of gradation in the negatives should all be the same. Having got these relative exposures, they should be rigidly adhered to for the particular batch of plates. This method of testing may be carried out even after the plates have been used in the field.

We now come to the transparencies, and there is not much to say regarding them. They were taken in my case not by contact, as they are reductions, and they should not be too opaque, but like a good lantern slide, and be full of detail. If the relative exposures of the negatives have been correct, they should without any alteration or manipulation give an accurate color picture on the screen. Now it has happened with myself that I have not been able before exposure exactly to gauge the color sensitiveness of a particular batch of plates, and in the case in my mind the green received about $\frac{1}{4}$ too much exposure, according to the test I have shown. The green negative was therefore too dense, and the transparency slightly too light. A correction was made in the transparency by giving the green $\frac{1}{4}$ more exposure, with the result that the picture in color was correct. It may be as well to say that the transparencies

should be taken separately, so that the central rays of a lens are used, and the light should be the same for each. The results of some of these we shall see shortly in the triple lantern.

In cases where the slides can be of the same size as the original the prints may be made on bichromated gelatine, as in Sanger Shepherd's process, and dyed with suitable dyes so that their opacity may be altered if requisite.

So far, with the exception of the method of Professor Woods, who used specially ruled gratings, it has been impracticable to reproduce on the screen or in the photo-chromoscope the images colored with spectral light; but I propose to show you that this can be done in a fairly simple manner.

The slits in the spectroscopic are still in the positions which allow the three rays to pass which form by their mixture white-light. The three patches of color are formed side by side by means of the three lenses we used before. Suppose we place three condensers in the position occupied by the patches, it will then be possible by spectacle lenses to produce a disc of white-light on a more distant screen (Fig. 5). This is only possible by diverting the red and blue rays to one side by right-angle prisms, and reflecting them on the outside condensers as in the diagram, beyond these are spectacle lenses which form overlapping images on a distant screen. When this disc is formed we can place in the proper places the trans-

FIG. 5.

parencies made from the three-color negatives, and, after focussing and adjusting, the three will blend together and we shall have the photograph in color produced by spectral rays. Unfortunately, we do not get such a body of light as we do with the lantern, and in order to make a bright picture it has to be made fairly small.

There is one curious feature, however, about this. We may still have exactly the same proportions of the three colors and form the transparency at a greater distance, so that the picture becomes larger, and it will at once be seen that the picture becomes less luminous and the image becomes green.

FIG. 6.

This is exactly what happens in moonlight. The light is reflected sunlight, and yet landscapes in nature appear green when illuminated by it. When all the rays of the spectrum are much reduced in intensity the color of the red just disappears, and the reduction takes place in the case of moonlight and of the transparency, which is increased in size.

Every one has not this apparatus, and, indeed, for lantern projection on a large scale, this method is at present impracticable, and so we fall back on a simple triple projection lantern, which suffices for all ordinary purposes. I have used simple lenses in its construction, as will be seen in the diagram. The lenses themselves cost but a few shillings, and the whole apparatus can be made by anyone who desires it, in a simple way (Fig 6). The model on which it is based is, of course, that of Ives'. It is used with the electric light, and by means of bundles of plain mirrors (which in this case are microscopic glass bound together),

the beam coming through the condenser of an electric lantern is diverted right and left, and also proceeds centrally. Those to the right and left are caught by silvered mirrors, and the three parallel beams proceed to three secondary condensers in a line in front of which the transparencies can be placed, and the rays collected from thence by three other spectacle lenses which form their images on the screen, and which can be blended together. Behind the secondary condensers are placed respectively color absorbing media, such as glasses which transmit light which approximate the same as the colors which represent the three-color sensations shown. Now we come to an important part of the matter. The three colors must be so mixed that they form white-light which is of the same quality as sunlight. This is done by throwing alongside the disc white daylight, which can be reflected from an aperture leading from the outside of the laboratory, and the necessary alterations made by changing the number of the glasses in the bundles till the mixture of red, blue, and green absolutely match it. The final very fine adjustment can be made by placing in contact with one or other of the colored glasses a piece of plain glass.

I may say that this takes some time to do, and, as daylight is fleeting, I have matched the light of day by my color patch apparatus, and from this apparatus placed a patch of light of the right whiteness alongside the disc of light coming from the triple lantern. Such a disc of light is now before you, and it will be seen what a different color it has to that of the arc light.

(Demonstrations were then given.)

It will be noticed of course that if transparencies are illuminated with the three colors which make the white of the arc light, the nuances of color in the landscape will be different. I felt that it would be interesting if the triple lantern pictures could be compared with the Sanger Shepherd process; and Mr. Sanger Shepherd kindly undertook to prepare from some of my negatives a set of lantern slides. I am of course not going into the process, as it is well known; but I may say that I was astonished at the results, which compare admirably with the slides I have shown you. We have, then, three distinct methods of testing the quality of the results, and if I may say so, I have a fourth, for on several occasions when I took color pictures I sketched them in water-colors, and the results are satisfactory to myself and show a similarity in color which is striking.

THE ARTISTIC ASPECTS OF PHOTOGRAPHY.

A Lecture Delivered Before the Royal Photographic Society.

BY F. C. TILNEY.

[While not altogether in sympathy with the lecturer in some points advanced and believing a less caustic reatment might be more convincing, the lecture contains so much of value to photographers that we do not grudge the unusually large space we have felt constrained to give it.—Eds.]

The vagueness of the title is not free from guile. At the same time, it admits, upon compulsion, of very precise definition. It is therefore a title that will serve our purpose in whatever emergency our subject may lead us.

By a process of elimination we may get nearer to its meaning. Thus: Scientific aspects are not in our way to-night. To commercial aspects we may thankfully give the go-by. Social, political, and topical aspects may be bundled together and passed by on the other side. Allowing scant service even to pictorial aspects, in the narrow sense of the word, we shall have arrived in the end at some notion of what the artistic aspect of photography really signifies.

It may surprise some that the artistic should be thus deliberately separated from the pictorial. The divorcement, however, is none of my making. Certainly their union, when it *does* occur, is the perfection of wedded conditions; but this only proves that the two things are not synonymous terms for the same thing, as is very generally supposed. The pictorial is a matter of the intellect; the artistic a matter of the emotions. The one born of the head, and the other of the heart, inasmuch as this, that the man who works can tell you exactly the whys and wherefores of his pictorial methods; but of his artistic movings he may be almost unconscious, or at least have no answer beyond "It pleases me thus, I know not why."

In other words then, artistry—to use a convenient substantive in default of one that should exist in our language, but does not—artistry, is, in the main, very little different from good taste. Good taste

is a desideratum of value all the world over, and saves us, in common life, even as a sense of humor saves us, from snares and pitfalls, degeneracy and suicide. In the world of pictures, however, where it is absolutely indispensable, good taste assumes a more important *role* than it plays in common life. Treasured and cultivated it becomes so powerful as to be, in reality, the artist's referee on all conceivable points connected with picture-making—his final mentor and guide in all his ideas. A photographer should be as jealous of his taste as a surgeon is of the cleanliness and keenness of his scalpel. To neglect it, to vilify it, to cause it to bow before convention, tradition or fashion, is to stultify it utterly sooner or later.

Without such good taste, such artistry, to drop the paraphrase, the happiest pictorial compositions will be but dry bones—handsome skeletons if you will; but dry bones still, lacking warmth, breath and soul.

It might be quite easily proved, however, that in the photographic world, handsome skeletons of the kind indicated readily find admirers and customers. Such a fact should have no weight with him who has any regard for the artistic aspect of his subject—such a fact, indeed, is in close connection with the commercial aspect. Buyer and seller work and react one upon another. The style of thing that is praised, noticed by the press, bought, or even talked of in one season, is usually imitated and reproduced in the next. This too is purely commercial.

The fact that a photograph is much discussed is no proof that it was ever worthy of discussion. Fame and fortune are capricious folk, often paying their visits at

the wrong houses. But fame and fortune are wooed by one and all. Even photographers are not proof against the temptation to do the thing that is popular in the face of admonition from their own taste.

Such temptation, however, does not attack the taste which has been cultivated and is, therefore, strong enough to say "Get thee behind me." Once again then do we see the prime necessity of taste-cultivation.

Should the question arise as to how it is to be taken in hand, it would be easy to lay down one or two general ideas, which the student might readily adapt to his own conditions. The process is a simple one, there is no mystery about it whatever. The student must be true to his own likes and dislikes, at the same time that he seeks in nature more and more of the former, and changes as many *dislikes* as he can into *likes*. In this connection it may be observed that numerous and strong animadversions do not as a rule betoken a broadly artistic temperament. The young lady—school of art student perhaps—who is so much concerned about the precise tint of a piece of ribbon that is "to go with" a certain hat and a certain hue of hair and complexion, is more the slave of prejudice than the master of artistic subtleties. The fear of being caught tripping is the mainspring of nearly all artistic yearnings of this class.

It is for this reason that I advance the wisdom of trying to like instead of to abhor, and particularly to love nature in what are popularly supposed to be her repellent moods. A quarter of a century since it was universally held that the countryside is only worthy in the summertime. As a matter of fact, the country usually looks its worst at that time, especially if the summer is hot and dusty.

The color of the landscape in the frosty months; or when spring lays a tender sprinkling of the purest green over all and opens her most charming flowers; or in autumn when green, gold, and brown, melt one into the other above and strew the

ground beneath; the color at these times I say is infinitely more eloquent, and the skies are infinitely more poetic than during July and August, when nature has matured, when her functions are fulfilled, and her glorious decline has not set in. Photographers fortunately have not overlooked this great truth, and that in spite of the fact that the charm of the color is at present not within their reach.

Whilst in landscape, however, there is little if anything that is actually ugly, it cannot be gainsaid that where subjects have the human element, or evidences of it, as in figures or architecture, there may occur combinations of items that fall below the perfection found in irresponsible and insensate Nature, and in such cases I would urge the student to the utmost to have regard to his first momentary promptings of displeasure or discontent rather than to wait for that sophistry or that worldly notion that may win him over in a few minutes. Generally speaking it may be taken for granted that when a man dislikes any natural scene, the balance of chances are that he is wrong; but that when he dislikes any particular figure or architectural subject, the balance of chances are that he is quite right.

A further aim in the training of the taste is that the student should strive to secure those qualities in his work that has attracted him in the subject—a task that, in photography, really resolves itself into one of technical and executive perfection. Above all he must keep his ideas guileless and free from all taint of the cant of societies and coteries, and clear of fashion's allurements. Should he verily see nothing admirable in certain transatlantic portraits of little white noses coming out of great black backgrounds, he should be readier to place his camera under a steam hammer than suffer himself to produce that style of thing for the sole reason that certain men here and certain papers there have, rightly or wrongly, extolled it.

It would appear that such a natural and evolutionary course as I have referred to for the formation of good taste is too irk-

somely slow for some. Quite recently there has been set afoot a demand for a more systematized and rapid initiation into pictorial secrets. As though, forsooth, there existed any tricks of a trade in truly artistic work, only awaiting demonstration to be understood and put into force!

Those who look to societies, to magazines, to lectures, and so forth for a short and easy way of making pictures, have yet to learn that whatever little crumbs of knowledge may be picked up thus, are scarcely worth stooping for. The large and valuable part of artistic knowledge is subject to no written laws, and hence it follows that theories upon it can never be more than profitless pedantry.

If, for example, the Royal Photographic Society were to lay itself out for an elaborate system of pictorial education for the improvement of its members, what, may we suppose, would actually result? Will those members who are admittedly clever and artistic, honestly say that their work would be enhanced by the theorizing of this or that man no more artistic or clever than themselves? It would be tacitly agreed that such lectures and demonstrations were for the beginners in the art. But the beginners, I hold, would be better left to their own slower and surer crawlings. In science and philosophy the crammed or rapidly-taught tyro may perhaps make a show of a sort; but in art the newly-taught tyro is an anomaly, for there he can make no rapid notes of concrete facts. There are no dates or quantities to learn off by heart, and he can watch no experiments performed before him. In a word, as all preachment or discussion about art must ever remain mere expression of opinion, and as opinions will be found to differ in every exponent at whose feet the helpless student sits, he will find in the end that he has no course but the slow sitting and assimilating process, which is the work of years. Lectures or debates upon art are splendid tonics and refreshments for the initiated, who can match against such their own experience, or test anew their old convictions. To the un-

initiated they are but as the discussion of mysteries in an unknown tongue.

A more excellent way, meet for those who are earnestly striving, is that of *self-instruction*. It is a more effective and more pleasurable way of attaining artistic enlightenment, and it is the only way. Unfortunately it is a way not open to all, for at the very outset the student must be endowed with a congenial temperament. In that fact lies the very fate of a photographer. Millions buy cameras and try hard; but a few only "have it in them," as we say, to make beautiful pictures. With the natural and personal advantages of a congenial temperament, and a receptive and responsive mind, the student may start on his course of training by learning how to use his eyes—one of the most difficult of the things he has to compass—for there is looking and *looking*; even as a cunning jeweller, on the one hand, and the proverbial fowl on the other, may look at the same pearls and diamonds.

By the mere act of facing the riddle of art in nature, he will gradually assimilate a deal of the knowledge he covets. For the riddle is a curious one in this respect, that the answer comes by dwelling upon the question. Even by such a slow process, however, the knowledge comes less tardily to the simple starrer than to the reader or debater, to whom indeed it seems never to come.

By reason of the honor done to me by my being placed in this position to-night, I am emboldened to express my modest opinion that the special and further fostering of the pictorial work of this Society would hardly be accompanied by any marked improvement in its exhibited pictures.

I am aware that the cry is a heartfelt and praiseworthy one: "Show me how to select my subjects and how to make attractive prints." But I am sadly aware also that the only truthful answer to that cry is short and severe to hopelessness—"Teach thyself." Who else in fact can teach those intangible and illusive subtleties

that make a picture either good or bad, irrespective of the handsome skeleton in composition it may possess? Does the aspirant set his hopes upon a trick to be taught; a mode to be adopted? If so, what manner of trick or mode must we advise him to prefer out of the goodly number that force themselves upon his gaze? Upon such a road of tuition he can find nothing but bewilderment, confusion, and vexation of spirit barring the way to the height he seeks.

Let him turn off this path. Let him give up the notion of sending a "stunner" next year, like So-and-So's fine thing, and let him educate himself by his eyes, silently. To look at Nature and then at pictures and then at Nature again is the way.

In matters of style and method, it is a mistake to try to persuade one's self against one's own judgment. Respect your own taste and never coerce it. The way to be successful is to be original—a pioneer if one can; and that can never come of imitating some one else.

The truest and finest originality is always found in the ordinary and beaten track of natural fact. He who sets all laws, conventions, and traditions at defiance; who does the trifling thing simply because no one has been foolish enough to do it before, and who abuses his materials for the sake of making folk look twice, is by no means a pioneer. He is simply an ill-advised creature playing at topsy-turvy.

The desire to succeed should be one which actuates the student to reproduce as nearly as possible, without violation of natural fact and principle, the charms felt in the ordinary view of visible things, and towards the attainment of this desire there can be no guide, no mentor, but the student's own taste, unsullied by any thought of a short cut to notoriety.

"Gang your ain gait," is the most profitable motto. No lecturer can mix before your eyes the elixir of artistic life; no essayist has the philosopher's stone up his sleeve. Many have attempted to impart artistry by oral means, but it remains ever unteachable.

What may be taught, however, and what a society like this I have now the honor of addressing may, and does teach, is, facility of execution, scientific knowledge, and all else that comes within the definition of technique. To attempt more is to promise the moon. The immense value of technical training lies in this fact, that it produces men clever at their craft, and without this, the most gifted artist is as hapless as a dumb poet who cannot write his own language.

Language must come before ideas. They are the subtler part. They comprise the feeling, the unnameable appreciations, the irresistible prompting of the artistic temperament. They come to the student as he finds himself growing more clever in the manipulation of his materials. He may have had dreams; but they were impossible of realization before. Now he finds that he can begin to substantiate them, and, in turn, his improving execution prompts fresh ideas. He goes to Nature and reads her by the light of his craft, not in the wildly generalized way of his former method. Possibilities of pictures present themselves, where before he went blindfold; for knowing better what can be done with his materials, he recognizes subjects that have inspired other workers; subjects that, before, he sought in vain outside their framed presentments.

He is now, in fact, a picture maker, but who, except himself, has instructed him?

In the case of the individual who listens to theories, and studies diagrams, things are vastly different. He tries to digest somebody's notions of "balance," of "radiating lines," of "masses" and "curves," and turning to some grand work with a reputation, either finds them all falsified, or fails to find them at all. Especially may this happen in photography, where it rarely occurs that nature answers exactly to conventional requirements.

The finest photographs that have ever appeared will not be found to owe much to deliberate selection on conventional pictorial lines. They have been the out-

come of individual taste and untrammelled predilections.

It will now become apparent why the pictorial was separated from the artistic aspect of the subject. The former may be learnt, but is worth little, at least, in photography; the latter is unteachable; though it may be learnt by intuitive means. So much for the earnest student seeking to form a fine taste.

What is the position of the man who to-day can claim success, fame, and sometimes opulence—the finished photographer?

Speaking as one to whose lot it has fallen during the last five years, to examine critically all the best pictorial photographs of this country, and a great quantity of those from abroad, I must confess that, on the whole, I have been as much shocked as I have been charmed. What has shocked, however, has by no means been found in the modest work, bearing the unknown name. On the contrary, as much of such work as is good enough to find a place in an important gallery is usually characterized by an honesty of purpose frequently wanting in the work of those with reputations. In the eyes of the general photographic world perhaps, these great ones alone are worthy of the laurels continually offered to them. For my own part I find, making one or two notable exceptions, that the man in the middle position, being neither a raw beginner nor a world-wide celebrity, frequently offers the most artistic work. He has knowledge and experience, and is as yet not so *blasé* that he must go beyond the bounds of license and galvanize his sensations into a thrill by some out-of-the-way unlawfulness. Such practices are no doubt of use in keeping the name of the depredator famous for something; but they are distinctly decadent.

Reverting to a matter already touched upon, we shall find that most lapses from good taste are committed in the name of originality

Far be it from me to deny any man the artistic right to do, and even to display the maddest thing under the sun, if he truly thinks that what he is doing has a

purpose or a charm. Individuality comes about in that very way, notwithstanding the fact that in *some* cases, individuality is attained by the cheapest possible means, and should cause shame and humiliation where it often results in pride and aggressiveness. But if it is admitted that no great sort of individuality consists in wearing strange clothes, because all other men elect to dress alike, what can be said of the man who would ape a Beau Brummell, and look round for applause?

Short of such slavish imitation for imitation's sake, however, it must be granted, of course, that it *is* salutary to take note of one's neighbor. A hermit life will bring no good. Interchange of opinion, comparison of criticism, all such mutual methods, honestly carried out, make for progress, because in the work and opinion of others, we can find something worth the having, which we ourselves lack, and something unpleasant of which we may resolve to rid ourselves. But all beyond this tends to a baneful diffusion of ideas. The self-centred life is the sterling one, where the ideas are perhaps fewer, but have greater depth of earth wherein to flourish.

What is to be deplored, is not *the original idea*; but *the desire to be original*—a distinction with a difference. And the desire to be original appears, in my humble opinion, to be at the root of all the regrettable tendencies of photographic picture-making to-day.

It is, of course, extremely difficult to be original, cutting adrift from the moorings of good taste. In the matter of subject, every available field has already been exploited; in the matter of treatment, the dealers have offered to the million, for a few pence, every variety of material needed for the varied printing processes. Even the designers of picture frames have run through the whole gamut of styles from unwieldy constructions at one end, to no frame at all at the other, including every material, natural or fabricated, under the sun. The man who would display originality, therefore, is driven, in the mat-

ter of subject, to subvert all accepted principles of composition and arrangement. In doing this, he finds vagaries of trimming afford him great help. A group of figures may have their top hair "trimmed" in this manner, whilst their feet and the carpet pattern hold the centre field of the noble work. A profile portrait is constantly trimmed just in front of the ear, as you all must have frequently noticed. I expect to see the day when a full-face portrait is presented by the same half measures.

So far as treatment of printing goes, the efforts have been mostly in the direction of perfectly flat, and most often dark effects upon a roughened paper that exaggerates the already too granular effect of the image. Absolute silhouettes are sometimes offered us in apparent seriousness. Who in their senses would consider it worth while to make silhouettes deliberately by photography? What does such a treatment give? One thing only—hard outline: the very thing that is anathematized by so-called artistic photographers. No tone, no planes, no "drawing," as photographers elect to say, no gradation, no textures, no atmosphere, no modelling, no detail, no quality. The original ones probably grew and flourished at Brighton; the modern ones are in place at Yarmouth. The name of an unpopular French minister became, in derision, applied to everything cheap and trifling. How well it was applied to this form of art, and how well is it still applicable to the empty flatnesses that disgrace pictorial photography in our galleries today!

Travelling in an opposite direction to the fatuous reaching after originality, is the equally dangerous practice of apeing certain methods peculiar to the graphic arts. I use the term "peculiar" advisedly, for the most senseless of these apeings is that of the scratchy background to a figure, which, natural, fitting, and desirable as it may be to a worker with a pointed instrument upon metal, stone, or paper, is monstrous when applied to any other form of

representation, and despicable into the bargain, when it is applied to photography.

I have brought with me a choice example of this precious form of *Art* with a capital A, which I should be glad if you would inspect before you leave. When you have noted the scratchings in the background, the shoulders and the hair, you will not need to have pointed out to you the utter incompatibility of it all with the photographic smoothness and absence of line in the face.

Even supposing the background were of a tonal instead of a linear nature, its presence here is highly detrimental to the relief of the head. In sheer ignorance of the principles he is pretending to understand, the artist, as he would no doubt have me call him, has positively produced the very opposite of the effect such a background treatment would be calculated to enhance. If I were to lay my tongue to the precise expressions that I think would properly describe this performance, you would perhaps think it advisable to remove me from this rostrum by constabulary aid.

There are other instances of artistic masquerading which you yourselves can easily call to mind. Some may be less reprehensible than others, some, indeed, may have no guilt beyond a chance resemblance to methods in the graphic arts. The flagrant example I have shown is more than enough to serve as a warning and to afford me personally a vigorous and heartfelt protest.

Amongst other misfortunes that have come in the wake of the cure of originality for its own sake, is the wanton falsity of tones. This has developed into a fashion; but of fashion particularly something may be said later on.

If there is any one quality in respect of which photography can, and should, excel all other pictorial methods, it is that of tonal values. Judging from many works I have seen, and some that I possess, of exquisite beauty in this respect, there is no doubt in my mind that it would be impossible to find effects of light and air,

that photography could not represent with more subtlety, more tenderness and truth than any other known method of monochrome representation. Is it a fact, however, that each photographic picture produced, with claims to be artistic, can show a due appreciation on the part of its author of these wonderful powers possessed by photography? Do we not see year by year the same utter ignorance, or disregard, which is worse, of the most obvious truths in the phenomena of light?

The names of several people who have somehow or other won reputations are seen in no retiring or modest characters attached to out-door scenes that are divisible into scarcely more than two tones. In another place I have observed that tone in a naturally lit scene is, in a musical sense, chromatic—an infinitely gradated gamut—that makes in its happy combinations the rich result that chords of close harmonies make: vastly different from the effect of one note in the treble and another in the bass, which is the metaphorical description of the faulty prints of which we speak. By what right are these claimed to be, and appraised to be of more artistic value than the glossy silver-print that is correctly exposed and simply printed? Is it supposed that the gloom of Erebus is capable of more poetic import than the natural light of day, or the glorious sublimity of sunshine? If this is maintained, then the true artist, whoever or wherever he is, will on his part maintain that the poetry of such prints is a purely subjective quality in the aberrated minds of those who make them, and is a spurious quantity in the taste of such as affect to admire them.

Certainly the light that they represent was never of actinic value enough to take a photograph at all, which begs the question why it ever was taken, if the actual result on the negative was less to be preferred than the ultimate result of the print. It can only be presumed that the camera was set up with the intention of getting something on the negative that would be deliberately submitted

to falsification and debasement in the printing. For such a practice there is only one name. It is prostitution; prostitution of one of the most marvellous discoveries of modern science to the whim and caprice of a faddist, who utters it seriously, as art, to the beguilement of the ignorant.

This leads to another point; the manipulation of prints, particularly those of the gum-bichromate order. That variety of print, more than any other, as I have remarked elsewhere, requires the artistic knowledge and the faultless taste. In the hands of an artist it may give charming results; but it is at the same time the greatest pit-fall of the photographer if he is not tolerably artistic. Generally speaking, the more prints that are amenable to handwork are worked upon, the less do they resemble the negatives from which they were derived. No doubt such manipulation is of great service to the photographer who wishes to turn a bad record of mid-day tones into something that, by the help of a title, may masquerade as an effect of the shades of evening. Further, gum prints are capable of a certain quality of an atmospheric kind, under the glamour of which the truth of tonal values often makes an unnoticed escape.

In the matter of truth of form, there is often just as much error as there is in point of tone. If the photographer who would insert trees, clouds and so forth, possessed but a little knowledge, he would be cognisant of the fact that to draw truthfully the characteristic shapes of trees and clouds requires years of careful study and observation. The probability is that he could not boast of so much education; if he could he would perhaps put it to a different use. It comes about, therefore, that the manipulated print, be it murky and indistinct as it sometimes is, usually bears upon it the stamp of unconvincingness, a great crime in art. Even the partial alteration of forms already existing is a most dangerous practice; since the accidental variations of nature, strange

as it may seem, are more difficult of representation than the general forms. Invention must be backed up by both knowledge and imagination, otherwise it is feeble falsehood.

Keeping in view, for the moment, the subject of tone, however, it will be interesting to note the words of one of the most advanced so-called impressionistic photographers of the day, Mr. George Davison. He himself has given utterance to these startlingly true words: "It is worth while noting that some of the simplest facts of light are overlooked by photographers who have been governed by the untrue and misleading conventions and dogmas concerning gradation and brilliancy. For instance, the necessity for points of the deepest black is insisted on, in order to give scope for as long as possible a series of steps up to the points of white, regardless of the fact that this black is generally much too black for the purpose in hand. A little experiment would show how light out door shadows should be as a rule. For instance, the darkest shadow out-of-doors seen at a little distance, is lighter than the shadow side of a white curtain in a room. Consequently it is of first rate importance in landscape pictures to keep the shadows light. To repeat the impression of out-door light the whole picture must be luminous and not heavy or dark."

For my own part I will not say that here and there a little reservation might not be made as to these remarks. Mr. Davison admits to being influenced by a certain Mr. Francis Bate of the New English Art Club. That gentleman overlooks the fact, and Mr. Davison is inclined to overlook it with him, that the perfect representation of natural light, especially sunlight, being obviously an impossibility, it becomes necessary in art to compromise, and to take nature in a key low enough to admit of something like true relations in chiaroscuro even using our whitest paper as the brightest spot in the picture. This necessarily places the shadows rather low in the scale. Nevertheless Mr. Davison's

words are, as I have already said, remarkably true. They were spoken more than four years ago. Have they borne fruit? Not a whit! Truly photographers are a stiff-necked generation! We see plenty of sunlight pictures veritably as black as ink, wherein the evidences of actual sunshine exists nowhere but in sun-cast shadows which are blacker than ink, unless perchance the print is made in Indian red or emerald green.

I do not deny that there are dangers in an opposite direction. There is such a thing as the "washed-out" print which is perhaps the outcome of the principles advocated by Mr. Francis Bate, to whom Mr. Davison has expressed his own indebtedness. It must be nearly twenty years since I read the little pamphlet in question, but I remember enough to know that it advocates light shadows everywhere, so that the whole picture may be suggestive of light. A picture so executed would, in itself, undoubtedly be fuller of light paint than one painted with plenty of shadows in their true relations, giving a truer sensation of actual daylight. And a peasant who confronted it might find himself somewhat dazzled, as he is when the sun shines in his eyes across the fields. But this effect upon the spectator is, I hold, an illusion, a trick. It is magnificent; but it is not art.

There is another question which is always fruitful of discussion. There is scarce need to name it. I refer to definition and diffusion of focus. To myself I put the case shortly thus: given every other particular and circumstances good and perfect; which photograph should I prefer, one with keen definition or one with wide diffusion? I should not hesitate to choose the former. Perhaps you will say that I seek "a poor choice in rotten apples," and that the wise selection lies midway between the extremes. This may be granted, but it avoids the point.

If it could be proved instead of merely claimed that wide diffusion is productive of more artistic results, no one would hesitate of course. So far as I know, it has not been proved, and hence the sup-

porters of the method are still in the minority. Let us ask ourselves whether this diffusion of focus improves what photographers call "drawing." Who has the temerity to say that it does? Does it improve the modelling? No more than the "drawing"! Does it facilitate the representation of textures? Scarcely. Does it secure tonal values? The very reverse can be proved. Does it produce breadth? Yes, of that sort that it is better to be without! Clear definition, on the other hand, may be shown to be necessary to the perfect portrayal of delineation, modelling, textures, and tones. It may further be demonstrated not to stand in the way of breadth, whilst it certainly is an added truth.

It is claimed that diffusion of focus renders a scene more as the human eye beholds it, but it is difficult to follow and endorse the arguments of those who advance that claim. Much easier is it to demonstrate that the human eye in a healthy condition never saw a scene blurred all over. Should I be thought too presumptuous if I directly combatted the favorite theory that the eye only sees one spot sharply and all the rest blurred? I grant that one spot is seen distinctly, but I submit that the vision flits so rapidly and adjusts itself so instantaneously that *all* parts of a scene are, to the eye, definitely viewed. Moreover there is scarcely any need of what is known as "accommodation" in viewing things beyond the distance of say 50 feet and right away to the horizon. Take, for example, a line of elms in winter time that stand against the sky at the farthest distance. A diffused focus will melt their forms away to nothing, but the eye will retain them perfectly. They are soft, of course, but sharp, nevertheless. It is the greatest blunder to suppose that an object may not be soft and yet have sharp edges. Distance affects tone only and solely. It has practically no effect whatever on sharpness. A notice board may be unreadable at a certain distance, but what renders it so? Are the letters blurred? Certainly not. Lift the

veil of atmosphere, as can be done by placing the board in a climate of clear air, and there are the letters, legible enough. When photographers learn the difference between veiling and blurring, we may have fewer fuzzygraphs. I am prepared to go a step further and maintain that although the eye only dwells definitely upon one small spot, all that it sees, more and more indistinctly around that spot, is not indistinct because it is blurred, but because it is fainter throughout. The retina is sensitive everywhere, though mostly so at one point. Correspondingly we see brightly at one point and more faintly over the rest of the field of vision.

Diffusion is another means of escape for truth of tone. The less definition, the greater the falsity of tone values. A picture thrown upon a lantern screen and turned more and more out of focus, will show the tones going more and more out of key until the whole is a general grey mass. Our enlargements almost always suffer in tonality upon this principle.

What saving grace remains then of this so-called artistic method of photography? For my part I think it nothing more than a fashion, set going in the first place by some well-meaning individuals who thought to save pictorial photography from the stigma of hardness and harshness that had brought the early albumenised proofs into disfavor. At this day, however, there is no fear of such a stigma. The complaint of black trees, hard shadows, and white skies has passed away. Why should the drastic remedy for them remain. If we are well, spare us the nasty medicine!

A less scientific consideration of this point lies in the question of breadth of effect being the enemy of detail. There are sufficient photographs about to say nothing of painted pictures which show this dogma to have been long since exploded. Indeed it should never have been inflated, for breadth cannot be correctly defined as absence of detail.

It is to be feared that fashion is too strong a factor in the photographic world, wherein imitation seems to be the in-

cerest form not of flattery, but of enviousness.

The need of taste becomes more urgent than ever; whilst the supply of that need appears to be weaker than ever. Individuality of taste bids fair to be swamped in a blind following of fashion, whilst fashion in turn has a tendency to become more and more independent of taste. This is the deplorable fact in modern pictorial photography.

There is no harm in the natural evolution of styles which flow in one direction for a period and then turn into fresh channels. But it is without doubt lamentable to the last degree that an art, or a craft (what you will), proving itself daily to be the deepest and widest influence in pictorial affairs that ever surged over mankind—an influence so insidious, so irresistible, that it has even undermined the most cherished traditions of art—it is lamentable that so powerful an influence should not exist with less downright and wanton opposition to the most obvious truths of nature, and, in the matter of arrangement and design, less disregard of those logical and rational progressions of thought that are common to all sensible people of whatever race and age.

The worst form of fashion is that which does not pass or change, but which crystallizes into a convention; and photography is threatened today with worse conventions than any of the older ones of artistic origin. Fashions that are more upheld by individual vanity than changed by individual taste are disastrous indeed. Under their potency the evolution of photography is pushed and pulled by activities that have more of moral delinquency than artistic single-heartedness.

Although there are many men of well-formed taste to stem the tide, they are yet too few. The masses gladly follow this tide because to their understanding no wiser course is apparent. They are imitative and therefore lack even the individualism of the leaders whom they think it politic to follow. Thus it comes about that the workers of second rank who

fill our exhibitions and magazines, display a deal of manner to a modicum of matter, preferring to be fashionable at second hand to being at any rate freshly natural.

Sad as all this, it is remarkable that there seldom appears any protest against the senseless and uninteresting prints that are made and popularized in the name of photography and art.

Critical acumen is at a low ebb, and so "anything will do." It does the better too if folks cannot understand it.

The reason for this unconventionally plain manner of speech on my part is this: I am convinced of the possible beauties of pictorial photography and am deeply interested in it. My own little collection of photographs, taken by some of my friends, are as choice a set of pictures as any artist need wish to see. In face of these facts it is painful to meet with so much that is of a lower standard coming from hands that should do better. Had I not known what beautiful work is possible within the bounds of good taste, I should perhaps have declined the much esteemed invitation to speak to you to-night. It seemed to me, however, an opportunity to place on record a protest against the trend of that indiscriminate admiration which seems to be growing for works that are distinctly not clever, and not in good taste.

The panegyrics that appear in the press directed to the work of this or that person, who has succeeded by hook or by crook in being original, has become nauseating. This and other practices put a premium on certain kinds of work and decoy the unwary to follow the same path. Sooner or later it will be found that it is a path that can only lead pictorial photography into the contempt of the greater world. It would have done so long since but for a few dozen that recognize the claims of good taste.

The newly Affiliated Societies all over the country should induce the belief in their members that correct exposure, even on a shiny silver-print is more artistic in every aspect of the case, than the scored sack-clothed expanses of meaningless pig-

ment that parade as art. The roughness of a paper cannot possibly have anything to do with the real intrinsic art of a subject. It has much less to do with it than even the framing and mounting. To set great store by the mere grain of a paper, and to count on its enhancing the artistic claims of a picture, is nothing short of ridiculous.

If the picture is good it will look well on glass or ivory. If it is bad, on the other hand, it would probably look *less* had printed on some surface having the texture of a well-decayed stone wall. The texture of the mere support is purely a matter of scale. We do not find miniatures on coarse canvas, and we should not look for frescoes on polished ivory.

The plea that a strong texture breaks up detail is a confession of weakness. Detail properly rendered is not in want of breaking up. More often the real advantage if any is that much roughness breaks up an under-exposed tract of smudge that would be unbearable in a smooth platinum paper.

In conclusion, I must beg you not to think that my remarks are intended to be sweeping. The delinquencies I have referred to are, I admit, often exceptional cases in a series of work from one author, but their occurrence none the less—perhaps the more—gauges our ideas of his taste. Good taste is what I urge as the salt of good photography.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. During August to Point O' Woods, L. I., N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1787. F. SOLOMON.—“Becalmed” is good so far as it goes, and might have been better if it had not gone so far. There rarely can be a reason for, in a seascape, the horizon being placed so high as to give the sea the appearance of a toboggan slide, and a feeling that the yacht in the distance, which in this case is near the top, may slide down, although when taken against the light and the forewater is filled with the well known wavy shadows it may be allowable. But here there is no such effect, the wavelets being so run into each other than when the yachts are covered there is not the slightest indication of water. Of the five and a half inch print only two inches are given to the sky while the water takes up three and a half inches; and in our opinion the trimming off of two inches from the latter very much improves the appearance of the picture. A minor but easily remedied fault is the angle of the horizon line. It is two degrees lower at the left than the right, due to careless matting. So far as the photography is

concerned it is an example of excellent technique, every line of the yachts being as sharp as a good lens can make it.

1788. J. E. ROSS.—“In Golden Gate Park” is a well selected subject made worthless from under-exposure. Surely you can see as well as we that the figure, trees, etc., are black as midnight, while both sky and water are simply unaltered white paper. We congratulate you on your selection and on the point of view, as only sufficient exposure prevented this from being a gem of the first water; but to make photographs worth looking at you must either give longer exposures or get a lens working at a larger aperture.

1789. G. E. FITCH.—“Indian Pipe.” From the nature of things this was meant to be a record, a reproduction of a well known plant, and as such your reproduction has none of the qualities of that phase of photography. In the first place, the arrangement should be such that the eye naturally turns its attention to the plant

itself, while here you have got a background of white and black squares that one keeps wondering what they mean or what they are doing there. Then, when it has got per force, fixed on the plate it is little better off, as for want of proper focussing it requires a good deal of imagination to get anything like a correct idea of its formation and appearance. A different background and better focussing were required to make this what it was meant and what it ought to be.

1790. OSCAR F. BLOMBERG.—"Portrait." We congratulate you on your courage in tackling the most difficult of all photographic branches, and do not mean to

discourage you when we say that in this there is nothing else to congratulate you on. We point out the faults the more readily because they are so evident that you will see them as well as we, and take care to avoid them in future. And first, although it is only a question of taste, but the long narrow oval with the head of the figure within a half-inch of the top, is, to us at least, very unpleasing, while it gives her the appearance of a giantess fit for a circus. Study it a little from this point of view, and she will appear to you about eight feet in height. Equally faulty are pose and expression, or rather the want of expression, the face conveying vacuity more than anything else; a feeling strengthened by the limp way in which the arms are listlessly hanging by her side. Not less faulty is the arrangement of the drapery, as although not focussed so as to show just how it was done, the effect is that of a pillar or pedestal with a broad base to keep it from tumbling over. Never trim a portrait to an oval unless you have a good reason for it; train your model until you can get her to assume such pose and expression as suits your purpose, and never twist the drapery into a shape that it could not naturally have assumed and you will soon have something better to send to the Portfolio.

1791. HARRY BOTHWELL.—"Twilight" does not, to us, in any degree suggest that delightful period of the day, looking more like a print from a badly fogged negative than anything else. And that the fogging has been done while the plate was in the camera is evident from the fact that the rabbit edges are unaffected, giving lines of clean black on at least three of the sides. Whether such a result was intended we cannot tell, but in any case it is simply a waste of good material.

1792. GEO. WALKER.—"A Country Road" is a fairly well selected subject that might have been better, the road, for example, instead of going straight back into the picture might have been going out at, say, the left a little more decidedly than it does

although that is a slight fault compared with what you have produced by over-development. Instead of being something like true to values, sky and road and indeed everything on which direct light has fallen are as white as paper can be made. Local reduction of both sky and road would be an improvement, and if you cannot better judge as to when to stop development you should take to developing by the factorial method.

1794. C. M. BATCHELLER.—“The Happy Mother,” a large hen with a fine brood of chickens, one of the prettiest sights to be seen on the farm, and this is one of the most natural and, photographically, one of the best reproductions of the beautiful scene that we have seen. As a record it is simply perfect, showing, to those sufficiently acquainted with them, even the varied expressions of the few days old chickies. We can almost hear the well-known motherly “cluck, cluck, cluck” as she unearths and breaks up a worm, and see the little ones rush to the food so lovingly prepared for them. Enlarged to

two or three diameters it would be an ornament to any wall.

1793. S. F. CLOWNEY.—“Their First Photograph,” a boy and girl, the former in rags and leaning against a tree, the latter looking and dressed as if belonging to a better class, and seated close to him on a large boulder, has much in it that is good with some things decidedly not so. The placing is fine, but the tree should not have been made to grow out of the boy's head as in spite of the beauty of the faces, the eye *will* wander up and up away from them. Then, the very worst possible thing is to have allowed them to stare into the camera as used to be done in the olden times when the little ones were told to watch for the little birdie coming out of the lens. You might have in some way engaged them with each other, giving action instead of this kind of repose. The idea of placing them so close together is good, suggesting as it does the natural tendency of the female to rest on the male, a state of matters that has been since the world began and shall continue till its end, in

spite of all that the "new woman" can say or do. The photography or technique is excellent, leaving nothing to be desired, and you only need to give a little more study to Art and the nature of things to do very fine work.

1795. F. F. SOMBERGER.—"The Edge of the Woods" is evidently intended to represent a snow scene, but the tone is too low, probably from under-development, although in spite of that the effect is fairly good, helped as it is by the many footsteps in the snow. It has, however, the all too common fault of such scenes, a subject that would not have been thought worth photographing but for the snow, and in this case at least, the white mantle does not give to it the desired pictorial quality. It is really a composition of only two planes, a foreground and a distance separated by a straight horizontal line of demarcation; and in consequence of the distance the trees being covered with what is probably hoar frost, it is only a shade darker than the foreground.

1796. LENA SELLERS.—"Begging for a Frolic"; an out-door scene, probably a garden; a girl dressed as a ballet girl, with one foot on the knee of a kneeling man, does not, to us, convey the idea involved in the title. Nor can we say much in favor

of the photography; the exposure having been so short and the development so long as to produce little else than white and black. The exposure has been in the highest of sunlight, yet there is not a trace of detail in the shadows, making the contrast painfully hard; and why a girl should be in the open air in such a dress is a puzzle beyond our solving. The only thing we can commend is the effort, and that, with more careful thought, especially as to the fitness of things, sufficient exposure and development stopped at the right time will bring success.

1797. H. O. DAVIS.—"Evening." We hardly know why you give the portrait this title, as there seems nothing in it to suggest it unless it be what might be a sleeveless night robe, only it is over, or appears to be over an ordinary house dress. It is an open air portrait in which pose, arrangement and expression are very good, as is also the technique, even to the development of the detail in the large mass of white, a rare thing in amateur portraiture. The only serious faults are the all too white sky and lack of space below the bottom of the dress.

1798. CARL KRERS.—"A Dusty Road" is one of the few pictures that are to us in every way satisfactory, and in which we can hardly see a fault or suggest an improvement. A span of horses in something on wheels coming toward us and partially buried in a cloud of dust; and hardly anything else; but sufficient to make us turn to it again and again, each time with renewed pleasure. Further study suggests a feeling that the sky is just a shade too low in tone, too nearly the same as that of the road, and that a slight local intensification of the negative, or protection of the sky in printing would improve it.

1799. W. C. REYMOND.—"Early Morning" is doubtless a beautiful subject in nature. A grassy foreground, a river with two figures on its banks, and on part of its surface the reflection of the distant hill. Such a scene is especially charming in the early hours, but its representation here is

simply a waste of material. Sky and such of the water as is not covered by reflection are merely unaltered paper, and there is no one part or object in the print of more interest than another. It is a poor photograph without a trace of either the picturesque or the pictorial.

1800. DR. EDWARD CLEPIN (?)—"The Bridle Path" is a good selection, except for an excess of foreground which places the horizon in the centre, the one place where it should never be unless for a good reason, which does not appear here. A more serious fault, however, and one that makes the print simply worthless is under-exposure, and why you don't see that as well as we is one of the many puzzles connected with photography. The trees and everything not in direct light are as black as anything can be made, while the sky and all that direct light has touched is equally white. It is as if the whitest of white paint had been laid on the blackest of black paper. Three or four times the exposure it got would not have been too much. With an over-exposed plate almost anything may be done, while with one that has been much under-exposed nothing can be done.

1801. M. A. YATCH—"Sunday Afternoon." The subject here is very much better than the photography, as it is not only well arranged, but suggestive of happy thoughts, and, it may be, the bringing back of pleasant memories. To us it is the not long wedded pair, after morning service and early dinner, seated under the shade of a tree in the grounds of a suburban home,

as close together as the garden seat will permit, and listening to the music of a gramophone. Free for the day from the cares of the week, and all in all to each other they have been in the enjoyment of that unspeakable happiness—the happiness that is independent of speech and known only to those who are such, till the sweet sound of the gramophone has lulled them to sleep, each supporting the other, truly typical of what it should be in all things.

But in the photography there is much room for improvement, probably in the exposure and certainly in the development. We know the difficulty in controlling the light in such open spaces, but that does not excuse such lack of contrast or flatness as is here, nor was there need, had the exposure been nearly correct, to continue the development till sky and white dress were, the one so white and the other so free from shadow detail. We know also that some pictorialists are inclined to belittle technique, but its absence here makes all the difference between a great success and partial failure. Study technique and, with arrangement as good as this there will be nothing but praise for your work.

From a print on Aristo Self-Toning Paper over 3 months old.

From a print on Aristo Self-Toning Paper.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol Tloga Centre, N. Y. During August to Point O'Woods, L. I., N. Y.

The Photographer, "Issued Every Saturday."—We have before us the first eight numbers of this welcome journal, welcome especially because of the three words we have placed within quotation marks. The fact that until now America has had no lasting weekly journal devoted to photography has always seemed to us a discredit either to American photographers or to those upon whom the burden of photographic literature has been laid; and as several attempts at such have been made, it is probable that the blame rests on the shoulders of both. But blame there is undoubtedly, seeing that little Great Britain, not to speak of other countries less photographic, has long supported several. Judging from the first eight numbers, *The Photographer* has made a good beginning, and under the editorship of Juan C. Abel, with a staff of men who give evidence of knowing whereof they speak, we hope that by its success the reproach will be removed from the shoulders of both. The annual subscription is \$2, and the publishing office is at 26 East Twenty-first street, New York.

* * *

WITH THE CAMERA, the monthly circular from the Illinois College of Photography, is always welcome, as, more than perhaps anything else, it shows the fallacy of the too often repeated cry that photography is declining. This tells of the marrying and giving in marriage of some of the pupils; of many who have secured good positions; and of others opening galleries on their own account; and of all being successful; a state of matters that speaks well for the training given in the college.

* * *

The following deliverance of the National Association of Photo-Engravers at their recent convention in St. Louis should be of interest to those intending to take to that branch of photography:

HEADQUARTERS 1904

N. A. P. E. CONVENTION HALL, CENTURY BUILDING, ST. LOUIS, MO.,

JUNE 22, 1904.

"The National Association of Photo-Engravers in our Eighth Annual Convention assembled, do find after a careful and thorough investigation that the Bissell College of Photo-Engraving located at Effingham, Ill., and conducted in connection with the Illinois College of Photography, is an institution worthy of the hearty encouragement of this association.

"We further find that the students attending this school are taught each and every department of photo-engraving in a thorough and practical manner, whereas, in an engraving plant where the usual manner of apprenticeship prevails, the apprentices are restricted to a single branch of the work.

"We further find that the school is well equipped and provided with competent instructors, and we do most heartily endorse the same, and recommend anyone desiring to learn the art of photo-engraving to take a course of instruction at this college.

"We further agree to accept a certificate of graduation as sufficient recommendation for a position in our workrooms."

* * *

THE AMERICAN ARISTOTYPE Co., of Jamestown, N. Y., send us two prints on their Aristo Self-Toning Paper, which we reproduce on another page as fine specimens of landscape photography, as well as serving to show that the paper is capable of rendering the finest detail in the negative. We are informed that one print is on fresh paper while the other was made on paper three months old, but close inspection fails to show any difference in the tone of the prints or the color of the paper. Its keeping qualities are therefore all that can be

desired and its many other advantages should commend its use to all photographers. It is generally supposed that collodion papers are difficult in manipulation and the inexperienced, as a rule, fight shy of them, but the instructions in each package of Aristo self-toning are so simple that anyone can make good prints of uniform tone. The makers claim absolute permanency for the prints if they are treated as they recommend and as the only chemicals

needed besides those contained in the emulsion of the paper is the ordinary fixing bath and a weak solution of common salt it will be seen that there is very little chance to go wrong. The finished prints have a rich and pleasing color in the shadows, brilliant highlights and a full range of half-tones and is equally well suited to the finest class of landscape or portrait work. It is obtainable of all dealers in packages of a dozen or by the gross and in matt or glossy surface.

LETTERS TO THE EDITORS.

Kodaks to Rent at the Fair.

GENTLEMEN:—

We wish that you would mention in your next issue, the fact that we have the concession for the rental of Kodaks in the World's Fair Grounds. Visitors can rent Eastman Kodaks any size up to 4 x 5 at reasonable rates by the day and thus be saved the trouble of bringing a Kodak.

We are located in the Official Photographers' Building on the Plaza St. Louis, near the East entrance to the Pike.

This information will interest many of your readers and the publication of the same will greatly oblige.

Yours very truly,

H. A. HYATT.

The Photo-Secession.

DEAR SIRs—As numbers of enquiries have reached me whether I personally, of the Photo-Secession as a body were interested or would be represented at the coming and much advertised Salon in New York, I feel myself compelled to thus publicly announce that the proposed exhibition will be of such a type or character that neither I nor the Photo-Secession can have any connection with it nor be represented therein.

By inserting this statement in your valued columns you will save me much annoyance and possibly render some of your readers a desired service. Yours truly,

ALFRED STIEGLITZ.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y. During August to Point O'Woods, L. I., N. Y.

Developing Factors.

B. F. SABIRE.—Under the conditions described the result you obtained, sky and water "as black and dense as could be," was evidently caused by using too high a factor for the edinol developer; 15 to 18 probably being better than 22. We cannot say when the "first appearance" should come as it depends on so many things, exposure, temperature, etc., nor is the appearance at the back in any degree

a guide, depending as it does on the thickness of the coating. If, however, you think over the matter you will see that with any kind of plate when more than the highest of high lights shows through at the back, the scale of gradation will be shortened at that end, as a light that should be a little lower than the highest has been equally high. When that occurs in factorial development you may be sure that you are using a too high factor. We

frequently employ a Wynne Meter but always give about 25 per cent. more exposure than it indicates and employ a factor that gives just what we want, shorter if the contrast is too great and *vice versa*.

Pinholes in Negatives.

L. O. STEENROD.—In reply to "Why do pinholes and defects of a like nature appear in copying more than in original work?" we can only say that under ordinary circumstances they do not. That they have done so in your case must be due to something out of the ordinary, and without knowing more than you have told us we can only guess at it. On the supposition that you employ a bellows camera and that you are copying at least to size, the bellows will be extended to twice its normal distance or the distance at which it is generally used. In thus extending the bellows it is possible that dust lurking in the sharp edges of the folds and in the corners may be disturbed and, floating about in the camera, may settle on the plate and cause the pinholes and other faults of which you complain. To test the matter you should extend the bellows to its utmost and dust it well with a damp cloth, letting it stand for an hour or two afterwards before using it, and probably your trouble will be gone. If not, write again, giving more particular information, but in any case you may rest satisfied that neither dust on the lens, although a photographer should never allow that, nor the use of any particular stop can cause the faults complained of. Thanks for your good opinion of the magazine, although the better way to help us is to tell that to others.

Developing Factors.

G. R. HILTON.—Why don't you try it for yourself? it is perfectly simple and you have command of far more leisure than comes to our share. Your uniform success shows that edinol is suitable for the developing machine and that you know just the proper time to continue its action.

The more frequently a solution is used the longer it will take to complete development in consequence of the gradual increase of the sodium bromide, but that increase will be in regular order easily ascertained by a single experiment after the development of each batch of films. Expose a roll of six in the ordinary way and cut them up, they will not be lost, and although they were, the work would be well worth them. After the development of each batch in the machine in the same solution and in the dark-room develop one of the experimental six, noting the time taken to complete it. Do the same with the solution after the third and so on to the sixth if it continues to give negatives up to the standard, and send us the result. To see such a statement in print, to know that it is true and will be of use to others, and that it is the result of your own labor will be a new pleasure known only to those who have experienced it.

PERCY S. BENEDICT.—We have not tried rodinal in the developing machine and are too far from home to experiment. Try 1 to 30 and give eight minutes. You need not, of course, experiment with the whole length of film, as one or two exposures in the dark-room will tell you all you want to know.

J. ADAMS.—Theoretically, it may be true that the lens is a shade faster than the average, but the additional rapidity in consequence of the fewer surfaces is so infinitesimal as to be practically nill. One lens is faster than another *only if it works at a larger aperture*. Select that with the longer focus. A sufficiently long focus lens, no matter how cheap, is for ordinary purposes, very much better than a too short anastigmat however costly.

MARION HARTLEY.—We are glad of your success with the developing machine, and sympathize with your desire to get rid of the pyro. With your favorite Ortol formula you might try eight minutes, and the result will show whether it is correct or what alteration is necessary.

GOSSIP—KATVYKE,

Alfred Stieglitz.

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THE CAMERA IN LITERATURE.

By LUCIEN D. SWIFT.



HE greatest aid in literature is the camera.

To some, who have given the subject no thought, this may seem a very bald and sweeping statement. But its truth has been established, nevertheless, by that dearest and most expensive of teachers—experience. The camera cannot make an author—he must be born. But it can do more than any other one thing towards the happy disposal of a well written, though dry article. How many of you are there, and count myself as one of your number, who when opening the crisp pages of new magazines do not first of all look at, admire and weave a story all your own about the illustrations?

This branch of magazine and newspaper work has made wonderful strides towards excellence in the past

few years. Ten years ago there was one photograph used for illustration where there are probably a dozen in use now. In fact, as far as my knowledge goes there is only one of the high class magazines that does not use illustrations. They have come to be considered as an accepted fact. Only two of the prominent New York newspapers accept matter without pictures. These are the exception to the general rule. The majority demand illustrations with the articles. A wordy description soon grows tiresome to the reader, but that is all the poor author can do to make one see the picture he is describing. Unless, he is the fortunate owner of a camera, when by simply pressing the button he has captured the whole scene, and given it to you at a glance. Whereas if he had to depend entirely on words to make

clear his meaning, whole pages would have been covered.

You not only catch the author's idea faster by his using the camera, but he is also able to give you that touch of local color which it is almost impossible to do in the average descriptive article. Mere words cannot always bring a clear picture of an object to your mind as a photograph does.

Editors, as a rule, plead that they are a much abused body. Whether we agree to this or not, I am sure that if we accepted the editorial chair we would look very favorably on the article accompanied by a number of clear, clean photographs of the scenes or objects described, where on the other hand in opposition is the article of many closely written pages with never an illustration to help tired minds to an understanding of what they are trying to say.

Not only in the disposal of an article does the camera help, but the financial returns are almost doubled. The majority of editors pay, and pay well, for articles accompanied by photographs. Not only this, but there is a constant demand for good photographs to use without any letter text. A number of magazines run picture contests. Four current numbers, picked at random from the pile on my study table, contain notices of photographs wanted. This surely is sufficient guarantee that the usefulness of the camera is on the increase, not the wane.

Now please pay close attention, although this next sentence is put here in the middle of my article, it is of more importance than all the rest.

Buy a good camera; and do your own developing.

More troubles and failures are caused by non-compliance with this rule than with any other in all picture-dom. A good camera will pay for itself twice over in quite a short time. You have it when you need it most. If you happen to be writing up the wild flowers of your native State, far better results can be obtained by taking the camera to your flower haunts than by taking your specimens to the camera.

If you have to be at the extra expense of paying a man to do the work, then your purse is indeed to be pitied! besides putting a lot of extra work on your own shoulders.

Another thing to be considered is that photographers are not always to be had when most needed. When you operate your own camera you can take all the time you need to find the best view point for your picture, take as many as you like; then when you carry them to the dark room and dip them in the developing bath you can soon see just what points you wish to bring out strongest. There are fewer more pleasurable feelings than those you have as you bend anxiously over the pan of developer and see the first faint outlines of your picture come in view.

Another pitfall that the author must avoid who depends on bought photographs to illustrate his article, is the copyrighted photograph. This snare catches its prey every day. The owner is liable to demand damages when

his copyrighted photograph meets his gaze from some newspaper's pages. Then you get just the same view that every other author does who buys his photographs. You have no chance to show originality, or a new presentation of an old view.

The author who does his own work in photography has ample recompense in the pleasure he gets from his nature work. The health he drinks with every breath of sweet, pure air brings inspiration in its train. He sees life from a better standpoint and its effect is at once noticed, by the editors, in his articles. Then if he happens to be a nature lover, and did you ever see an enthusiastic photographer who was not? what delight to him is a corner of an old rail fence with bunches of wild purple violets lifting their heads from beds of dead brown leaves, hang-

ing over the edge of a rain-washed ravine, while high over their heads swing the white-hatted branches of the dogwood tree.

Just a few yards further along is a gigantic oak whose roots have risen above the ground and formed odd nooks and crooks with their turns. Here in one of these little root nests a young cedar has sprung into life, resting with the utmost confidence in the strength and shelter of the older, larger tree.

If you saw these pictures with your own eyes, and your trusted camera was ready to hand, how long before those pictures would be yours to take away, soon to send them away on their journey to brighten and gladden others' lives and others' eyes, which, surrounded by city walls, cannot feast on country treasures.

WALTER ZIMMERMAN'S TRAVEL PICTURES.

BY SADAKICHI HARTMANN.

IT is not difficult to understand the extraordinary fascination that Europe, as a hunting ground for pictorial incidents, exercises over the photographer.

To the American amateur, accustomed to the natural and unesthetic side of our civilization, the artistic atmosphere which pervades "the other side" comes as a delightful relief. He finds for the first time what artistic surroundings really mean. He exchanges an atmosphere of indifference, if not opposition, for one in which his best expectations are met with sympathy, and his aims and intentions furthered by more favorable circumstances. The bare tolerance which has been extended to him by his own people at home no longer irritates him, and he is able to expand under the genial light of more favorable suns and skies. What he may choose to photograph will please him by its suggestiveness and artistic make-up. He can work frankly and straightforwardly, embarrassed, if he is at all, only by the wealth of material which is available. He may have to limit himself to particular classes of subjects, but in such cases it will solely be because amid so much that is ready for immediate treatment he is compelled by exigencies of convenience to avoid the temptation to attempt more than he can possibly complete. He

can console himself for this enforced abstinence by the reflection that when he comes again—and what globe-trotter does not promise himself many more visits to the same tramping ground?—he will cover wider fields.

Such was also the experience of Walter Zimmerman when he took a small pocket camera on a short trip to Switzerland in 1900. Later on he travelled all over Europe, and wherever he went added quite a fresh type of pictorial photographs to the series of European illustrations, which many other photographers have been indefatigably compiling. His travel pictures inspire us by the freshness of his view; he has succeeded in attracting us with old material in a new and fascinating way. His "A Street in Old Vitré," "Shell Gatherers," "A Breton Study," "Saint Anne's Day," etc., are some of the interesting things he has brought back as trophies of his travels. Hundreds of his negatives still await manipulation, comparatively very little of his work in Switzerland and other countries has been on exhibition, and the little I have seen of it seems to be as promising as his Breton series.

They show, quite apart from its other merits, a distinct gift in the direction of simplicity and descriptive skill—a return, as it were, to that which is healthy and life-like and normal, after all the intricacies and un-

ST. ANNE'S DAY.

Walter Zimmerman
Salon Club of America.

wholesome subtleties of some whom we esteem to be esthetic workers. His ambition is merely to create pictures, which are easily understood, which tell their own story, and recall to the mind of the spectator pleasant memories from his own experience. Of these "A Breton Study" is a re-

markable example. Nothing more simple or more pictorial can be imagined than this marketwoman sitting placidly among her wares waiting for a customer. Or take his "Shell Gatherers." How easy it would have been to debase into ugliness the curious individuality of his models, if he had made the mistake of considering minor particulars as of more moment than general effect. But there is apparently something in the influence of the European atmosphere which prevents the American worker from drifting into errors, that cause many a print produced under the control of home influences to miss its aim. Zimmerman apparently learned quickly the lessons which are presented there to every student of art. He mastered the great principle, perhaps the most important of all, the necessity for keeping every part of his work in right interdependence, and of treating each one in due subjection to his main design.

Concerning the technical character of the prints themselves there is something to be said. The method in which they are executed is quite an interesting one. He is fond of making large negatives from small plates or films, and claims that he has invented a new process by which all desired modifications can be secured in the new negative. His enlargements are marked by a certain quality of decorative contrast; by the juxtaposition of various light and darker tints in large masses, and although handled very freely and in a manner particularly bold and definite, his pictures are re-

**A VITRE
STREET.**

Walter Zimmerman.
Salon Club of America.

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A BRETON STUDY.

Walter Zimmerman.
Salon Club of America.

finer and subtler in their modelling, and gradated with extreme delicacy.

The picturesque costumes of the Bretons, their tottering, centuries-old houses, their picturesque cloisters and churches and their quaint religious services have furnished him with many happy subjects. The truthfulness of his pictures is striking; one would like to see them forming part of some book which would tell of the customs prevalent in these out-of-the-way places, for there beyond all doubt they would be in their proper place. The draughtsmanship (if it is permissible to use the word in photographic work) is clearness itself and admirably simple, and the details are taken in such a way that they adapt themselves particularly well to reproductions on a large scale. Some of his pictures would stand almost life-size enlargement, and only then yield their true significance. One is so accustomed to

the haphazard picture whose charms come often so much more from good luck than good guidance, that a reasoned and calculated photographic design in itself is a pleasant surprise.

Perhaps he sees life less as an artist than with the broadly human eye, and only after a theme has appealed to him does he set his ordering hand to create for it a beautiful and significant rendering. Hence the rare balance of all his work.

Originally a mere amateur-tourist, and accustomed unexpressibly to assert his own novel moods, he has gradually attained to the wider and more artistic outlook of the pictorialist; and by yielding in part to the exigencies of his new vocation without testing the necessity by thought and experiment, he has ushered himself into a style individual and distinguished, and has achieved a manner all his own.

A NORMANDY COURTYARD.

Walter Zimmerman.
Salon Club of America.

BRITTANY FISHERMEN.

Walter Zimmerman.
Salon Club of America.

PICTORIAL PORTRAITURE.

BY JAMES THOMPSON.

NOT being one of the "born and not made" artists, but only a fairly expert photographer, willing to sink my own individuality in that of some of those that are, the all important question is which or what class shall it be. My object, I may as well confess at once, is to become a prize winner, and I have not forgotten the advice of the editor of one of the magazines to the effect that I should study the leaning of the judges in any competition and work accordingly. But that does not always pan out as might be expected. Judges, like trees, are known by their fruit—the work they do; but in the "Pictorial Portrait" class of the *Photo-American's* late competition, those who tried to follow Eickemeyer's well known and beautiful lead, must have been woefully disappointed when

he saw the print to which the first prize had been awarded.

In the editor's introduction to the prize list he says, "Some wonderfully fine work was received and Mr. Eickemeyer, beside doing hard work, had an opportunity to feast his eyes." Opposite that statement is a reproduction in half-tone of the first prize pictorial portrait, utterly unlike any work that ever Eickemeyer did, and, in my poor opinion, quite as utterly unworthy of the laudation of the editor.

The background, the inverted branch of what looks like an apple-tree in blossom, and as well defined as are the figures, a mother and child, the latter altogether and the former partly in white, but the white of two patches of paper, without texture or shade; and worse, if worse can be, the lines have that easily observed and as easily felt weakening effect of two heads vertically placed. Making all due allowance for loss through reproduction, I must say that if this is the best it is the best of a poor lot, and easily beaten by almost any amateur of average ability.

But poor as it is, it proclaims itself; tells plainly enough what it was meant to be, which is more, much more, than can be said of some others that have been hailed as masterpieces and as proofs that photography is an art with the biggest of big A's. I do not in this refer to the eccentricities with slices taken from the heads or like absurdities, but to, say, the imitation of some of the "old masters," where pictures painted originally as they

should with features, drapery, etc., were shown, but in which through the action of time and all that it implies everything had faded but just sufficient of the face to show that it had been a portrait, and often leaving the sex in doubt.

Readers of the magazines will know exactly what I mean, but not so easy will it be to say what we are going to do about it. Perhaps the best way will be to remember that there is room enough for all and that each may aim at that which pleases him best, assured that the really best shall remain long after that of lesser value shall be forgotten. Nor, after all, is it difficult to predict what that permanent phase shall be. It will not be the imitation of any other method by which the human form Divine is sought to be portrayed, although photography is easily capable of imitating all, but a method peculiar to itself, and which no other method can approach. Photography's peculiar characteristic is the giving of a definition to which no human hand can approach, and the permanent method of portraiture shall use that power instead of abusing it; shall use it to lead to the face with its hints of the soul within, rather than, as is now too often seen, bury it in the deepest darkness.

Those who can buy, beg or borrow *The American Monthly Review of Reviews* for August, will find on the 134th page just the kind of portrait that I have in my eye. It is a portrait of William Jennings Bryan, better than he deserves if every one thought

SHELL GATHERERS.

Walter Zimmerman.
Salon Club of America.

of him as I do, and my ideal of photographic portraiture. Everything is there, perfect in tone, values, and texture, yet so subdued as to lead both eye and mind to the expressive countenance, so expressive as to be a god-send to a palmist or other charlatan.

The Photo-Era for August is also before me, containing two pictures by Steichen, his "Self-Portrait" and "Portrait of Lenbach," both of which have been lauded to the skies, and they and others like them are said to be fine enough to have been accepted by the judges of the Paris Salon. They may, nay must have merits that I cannot see, and yet, placed side by side with that of Bryan, already mentioned, and some others like it, I cannot think that any sane sensible man would see them on his walls in preference to the others, or that any pro-

fessional photographer would think of offering them to his clients.

But all this brings me no nearer to a sure method of medal getting and leaves me still wondering what I am going to do about it. But, like many others in this curious world, although I hardly know what to do myself, I am always ready and find it quite easy to advise others. And here is the advice: Never mind the fads and fancies of others, not even those of the judges, but do your own work in your own way and to the very best of your ability. Photography's method is peculiar to itself and is good enough to stand on its own bottom without aid or even suggestion from other methods, and although both judges and people generally may go wrong for a time, they will not always continue so, and the time for your innings shall surely come.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

WHILE second to none in my admiration of the nude and semi-draped when reproduced by the painter or the sculptor, there is no adjective in my vocabulary strong enough for the condemnation of either when they are the outcome of photography, and especially as they sometimes appear as advertisements in some of the magazines. I am aware that it is sometimes difficult to draw the line when the advertising

manager and the art editor take different views, and think that photographers should be interested in the following guide out of the difficulty as told by Stephen H. Horgan, art editor of the New York Tribune, in *The Inland Printer*. He was employed to decide between the advertising manager and the editor of a certain newspaper under the following circumstances:

The editor of this department was

AN OLD NORMANDY INN.

**Walter Zimmerman,
Salon Club of America.**

called upon recently to settle a dispute between an advertising manager and the editor of a metropolitan newspaper. The question was as to the fitness for publication in half-tone of a photograph supposed to advertise a corset. The picture was of a most voluptuous-looking woman, photographed in her boudoir, wearing the corset over a specially short petticoat, while her maid was presumably fastening her slipper. A special effort had been made in the woman's pose to display her anatomy, from the bottom of the petticoat down, as the conspicuous feature of the picture. When I decided against the reproduction of the photograph the advertising manager became furious. He demanded to know what was the rule that decided the unfitness of a picture for publication. Pictures, he said, were printed of South African women and other aborigines almost nude, chorus girls, acrobats, trapeze performers in tights; bathers in all manner of poses were printed. Then why object to this corseted woman? The exact dividing line between decency and indecency is not easily drawn, still I was compelled to quickly formulate an answer to this advertising manager, and it was as follows: "Photographs of human beings in costumes or poses in which they would not appear in public are liable to be unfit for publication in an ordinary newspaper."

* * *

IS IT "ALL IN THE LENS"? A well known British photographer and prolific writer on subjects photographic,

speaking of cheap cameras, gives to the impecunious the following comforting information:

"The very serviceable hand cameras which can now be bought for a few shillings, are not only of use in the practice of economy with beginners, but are in every way good enough as a base for the most advanced class of work. Personal experience justifies this opinion, as a set of three interchangeable lenses—which cost, I believe, about ninepence the set—have secured me things which have been accepted at some of the leading exhibitions in London and abroad."

While knowing this to be true, I say get the best lens you can, as the better it is the more it will do that cheaper lenses will not. But those who cannot get beyond a spectacle "eye," provided they know how, may make with it landscapes in every respect as good as they could with the most costly anastigmat.

* * *

Learning photography "while you wait" seems now to be an accomplished fact. *The British Journal of Photography* says, "We understand that Kodak, Ltd., has undertaken, where twelve friends or more are gathered together in society, at home or at school, to send without charge a capable demonstrator, who will give instruction and explanation in the processes used in photography from start to finish, and he will do it in so simple a way as to enable his hearers to start out with a camera right

away and bring back successful pictures."

But Kodak, Ltd. may find, as I did long ago, that there are differences in the absorbing powers of different people. Two cases occur to me now. The first was the Rev. D. T. K. Drummond, at one time a well known and popular clergyman in Edinburgh. It was in the days of wet collodion, and he knew absolutely nothing practically of photography. I had seen to an outfit including a 10 x 12 so-called Kinnear camera, a "Smart's" tent, and all the necessary appliances and solutions. Everything was in place ready to pack, but laid out on my laboratory table, and he had just one hour to spare. He sat, looking, listening, and making notes while I talked and explained the theory as well as I could, going through the operations from the cleaning of the plate to the varnishing of the negative in a kind of "dumb show"; and on his return from his two month's vacation he brought three or four dozen of as good negatives, both in technique and art as were to be seen then, and that would compare well with the best that are produced now. The other was a man of middle age of sufficient ability to have been for twenty-three years a bookkeeper with James Gray, a well known ironmonger in George Street, Edinburgh. He had come into possession of a lot of negatives and wanted only to be taught how to print from them. He had three lessons of an hour each, during which, under my direction, he had made a number of prints, with his own hands, doing

everything from the sensitizing of the paper to mounting and burnishing.

At the end of the third lesson he left, taking with him a complete printing outfit, quite sure that during his vacation he could make all the prints he wanted for the illustration of a price list of grates, etc. It was a Saturday and he was to start on Monday. But to make assurance doubly sure, he thought he would make a last trial on the Sunday, and the result was such that he came to me on the Monday in no very friendly state of mind, insinuating even that I was no better than some others, who, while professing to show all the secrets of the trade, still kept something back. He had not got even the ghost of an impression on the paper after an hour's exposure to bright sunlight.

We went to the laboratory where I placed before him everything necessary for the making of a print and asked him to go ahead, doing exactly as he had done; and he did, doing everything right till the placing of the printing frame in the sunlight, but that he placed *face down*.

* * *

It is amusing to watch the working of the mind, or rather of some minds. This is suggested to me now by an article in a recent number of *Photography*, the subject being "Orthochromatic Exuberance, an Unorthodox View," and the author Charles B. Dyer. He begins by protesting against the use of orthochromatic plates and films for general purposes,

and occupies two pages in giving his reasons therefor; which, boiled down, amount to nothing more than that, in his opinion, they are, when used without a color screen, no better than ordinary plates.

The only faults that he can find to them are two, the belief that they do not keep so long, and are more apt to fog under the dark room light, both of which I have again and again shown to be non-existent. Admitting, as he does, that orthochromatic films are essential for many subjects and purposes, and that they are in every respect as good for the others as the unorthochromatic; that, in fact they will do all that the unorthochromatic will do, and much that they will not do; the mental attitude that will prefer the less to the more perfect is beyond my comprehension.

* * *

Just as an ill wind blows good to some one, so does a good thing generally bring some evil in its train. The hand camera is the good thing I have in my mind's eye just now, and its accompanying evil is "stalking." Stalking, according to the dictionary, is "to approach secretly in order to kill," and while the stalking photographer does not go quite so far as that, he himself deserves to be stalked in the true sense of the word. This paragraph was suggested by the fact that in some of the British photographic magazines the subject has been discussed and even defended on the ground that a man may do what

he likes with his own, so long as he does not make a bad use of it; but I have seen enough during the past season to show that to be a dangerous doctrine.

"When in doubt play triumph," triumph in this case being the "golden rule," or when in doubt regarding that refer to the following clipping from *The Amateur Photographer* and be guided thereby:

(1) Never photograph a man in such circumstances as you yourself would not like to be photographed in.

(2) Certain classes should be tabooed:

(a) Public personages travelling incognito.

(b) People laboring under physical deformities.

(c) People suffering from temporary accidents, *e.g.*, the occupants of a Channel steamer after a stormy passage.

(d) In general, people who implicitly or explicitly express a dislike to be photographed.

(3) Never use an expedient to prevent a person knowing he was being photographed, when, if he did know, he would probably resent it.

(4) Never let the fact that the victim "didn't know" excuse a violation of good taste.

(5) Never use a camera as a medium for "a thundering good practical joke."

(6) Finally, remember that though you may escape without penalty, your misdoings will be held against the brotherhood in general.

NOTES

HALF-COLOR FILTERS AS SKY SHADES.—Herr Renger Patzsch, in *Apollo*, suggests a method of getting over the difficulty in securing good skies in landscapes by the exposure that, after a rough trial, we have no doubt will be thoroughly effective. He proposes to place before the lens a half, more or less, disc of yellow glass, such as is generally employed with orthochromatic plates, so arranged that it shall filter all the light coming from the sky and in such proximity to the lens that no line of demonstration is produced. Our experiments were made with colored gelatine and sections of a paper tube that just fitted over the lens mount. With material so workable it was easy to make several screens of various sized fractions of discs suitable for skies of various depths, and our results were thoroughly promising.

PRACTICAL FOCUSsing.—Focussing is generally believed to be the easiest of all photographic operations, the one thing needful being a pair of good eyes; but it is not quite so as will be seen from the following note which we clip from *The Amateur Photographer* and heartily recommend to the attention of our readers:

The use of too small a stop when focussing is apt to destroy all sense of atmosphere and modelling in the picture, and instead of there being any good perspective and depth in the resulting print it will look as if all the objects photographed were on the

same plane. Many photographers stop down simply because they are unable to get the immediate foreground as sharp as they would like it to be, but as a matter of fact the small stop is too frequently used, simply because they either do not understand the art of focussing, or because they do not fully appreciate the use of the swing back that their camera is fitted with. Even when working at a large aperture, it is quite possible to get everything properly focussed by adjusting the swing-back or the swing-front, and so preserve the atmospheric effect without getting a woolly definition in the foreground. Careful focussing with the largest aperture of the lens will give a relief and modelling that the small stop entirely destroys, and it is only the photographer who is infatuated with the purely technical side of his hobby who aims at that needle-sharp definition that one sometimes sees. There is a great deal of difference between the soft focussing that is so desirable and the so-called "fuzziness" that is always derided by the non-pictorial photographer; for in focussing to gain a soft effect there is no loss of texture, nor is one conscious, when looking at the finished print, of any loss of detail. On the other hand, when a picture is focussed "dead sharp" all over, it seems to be crowded with an entirely unnecessary amount of detail, and the result simply becomes irritating. The lens sees far too much, and the care-

ful photographer will try and suppress the details that appear to him unnecessary to the success of his composition.

INTENSIFICATION AND REDUCTION.—Rehalogenising and redeveloping for intensifying or reducing has recently been the subject of discussion in one of our British contemporaries, one of the writers saying that he hit on it in 1895, while another reminds him that he brought it before one of the societies in 1893. Surely, however, the method was tolerably well known before even the earlier date. At all events we remember having seen Mr. Jones, one of the Eastman Company's demonstrators, employing it in Chicago as early as 1889.

It seems, however, to be less known or at least less practised than it de-

serves, it being both simple, certain, and perfectly under control; and is equally applicable to negatives or prints.

The formulae given by one of the writers referred to are as good as any others, and are as follows:

To CHLORISE.

Bichromate pot.	10 gr.
Chloride pot.	10 gr.
Water	1 oz.
Hydrochloric acid	6 minims.

To BROMISE.

Bichromate pot.	10 gr.
Bromide pot.	10 gr.
Water	1 oz.
Hydrochloric acid	6 minims.

We prefer, for ordinary purposes, the bromising, taking care that the action is complete, and generally develop with edinol weak and well restrained; and applied with a brush when local action is necessary.

THE BRITISH CONVENTION.

THE Photographic Convention of the United Kingdom, to give it its correct title, held its nineteenth annual meeting in Derby for the second time, it having had its birth there nineteen years ago, and the only item of all the sayings and doings of the week with which any one had the temerity to find fault was the statement of the treasurer to the effect that he had a balance on the right side of the cash book of some \$2,250. Just what the objection is we hardly know, but the kickers seem to have no better reason for it than the statement that "it is hardly

the aim and purpose of the P.C.U.K. to amass nest-eggs in order to hatch out silk umbrellas," alluding to the playful statement of the treasurer.

However, the Convention seems to have been a very decided success, although the attendance was not quite up to the mark of last year. The proceedings, as usual, began on the Monday evening (July 11th) with a reception and address of welcome by the Mayor in the Albert Hall; an address by the President, Mr. G. Herbert, Strutt, music, both instrumental and vocal, by three fine singers and an excellent band, refreshments,

and an examination of dealers' displays and many good examples of the work of the members.

During the week the days were spent in visits to many beautiful localities and picturesque structures including Ashbowne, Dovedale; Bridgehill, Belfer, the residence of the president, where the usual photograph of the members was taken; Hardwick Hall, Haddon Hall, etc.; the business meeting, at which Dublin was again decided on for next year's meeting; and the evenings to the usual dinner and two lectures, one on telephotography by T. R. Dollmeyer; the other on figures in landscape, by H. Snowden Ward, both illustrated by lantern slides; after which the Derby photographers showed what they could do in slide making by projecting a lot of their slides on the screen.

Although the British Convention has always included both the amateur and the professional, the latter for the first time, under the auspices we believe, of the Professional Photographers' Association, held an exhibition of its work, and in a separate gallery, but as representative of British professional photography it was more or less a failure. Speaking

of it, *The British Journal of Photography* says, "But for a sprinkling of really good pictures here and there, the exhibition would have to be marked down as mediocre only." Nor is it to be wondered at. British professional photographers can hardly be said to be up to the American mark in taking advantage of such opportunities, as only twenty-two of them took part in the exhibition.

But, taking it all in all, the conventioners had a good time, which, after all, is the main object of the meeting. In its inception the educational was intended to bulk as largely as the social, but plan as we may, things will drift into the way they ought to go, and the convention is no exception to the rule. All worth knowing finds its way into the literature of photography and can be absorbed better from that source than convention meetings, and consequently the social has practically ousted the educational, and by so much the convention has been the gainer. "All work and no play," etc., etc., and the professional photographer who cannot find time and means to enable him to enjoy and benefit by attendance at his convention has mistaken his calling.

THICK COATING ON SILVERED MIRRORS.

HALF-TONE block makers who re-silver their own mirrors rarely get as thick a coating as they would like, or one that will bear repolishing as often as they desire, will be glad of the following as

practiced by Harold Hood and communicated to *The Photogram*:

Procedure.—Place the old mirror into a weak solution of nitric acid—say 5 per cent.—which immediately removes the silver. Rinse it a little,

and then clean very thoroughly with a pledget of cotton-wool and a mixture of whiting and ammonia. Rouge will answer in place of whiting, or, as a last extreme, finest levigated pumice, first applied to a waste glass to crush down any possible grit. This cleaning is of the very utmost importance, as upon its thoroughness depends eventual success. Front, back, and edges must alike be left in a state above suspicion. The plate is then again flowed with weak acid, rinsed beneath the tap, then flowed back and front with distilled water, and kept immersed in a glass-covered dish of distilled water until the solutions are ready.

The depositing vessel is the next consideration, and it should be realized that unless most of the silver in the solution finds its way on to the face of the mirror it were cheaper that the glass should be sent to the professional mirror-maker. The best plan is to use a glass dish allowing of 1/16 in. margin all round the mirror, inside. But such a glass dish is expensive, having to be made specially, there being no regular sizes near enough to 4 x 7 or 8 x 5 (usual mirror sizes). If too large a dish must perforce be used, the sides or ends should be filled up with sealing-wax. Four strips of glass are temporarily bound together with two or three turns of string so as to form a hollow square. The side pieces are 1/8 in. longer outside and the end pieces 1/8 in. wider than the mirror glass. This frame is placed in about the centre of the dish, moistened with glycerine,

and the molten wax flowed outside of it to a depth of about three-quarters of an inch or more. For economy's sake, good "parcel wax" may be used, but best red sealing is safer. This wax frame may be used repeatedly, being cleaned prior to each silvering operation. It is the only special appliance necessary, and half an hour is a liberal time allowance for making it.

Silvering Solutions.

I.

Silver nitrate	160 gr.
Water (distilled) to	5 oz.
Liquor ammonia (.880) . . .	

(see instructions).

II.

Tartrate of soda	42 gr.
Silver nitrate	7 "
Water (distilled) to	5 oz.

In the case of the reducing agent (Solution II.) the sodium tartrate is dissolved in a beaker which is then suspended over a Bunsen burner till boiling point is reached. If no boiling ring-stand is handy, the beaker may be suspended by a string passed once round the rim and looped. Having dissolved the 7 grains silver nitrate in a drachm of water, add this to the hot tartrate solution and continue to boil for about four minutes; when cold, filter, and set aside until the silver solution is ready for reduction and the mirror in position.

To the silver nitrate solution liquor ammonia .880 is added, three or four minims at a time for the first few stirrings, afterwards one minim at a time, stirring between each lot. The dense precipitate first formed, grad-

ually re-dissolves, and the addition of ammonia is continued until the solution is only of a light brown turbidity. It must not be clear, but a little of the precipitate allowed to remain. The respective solutions are then filtered twice through double filter papers, using different papers for each solution, and, preferably, different funnels.

One half of each solution ($2\frac{1}{2}$ oz.) is now taken and mixed together. The depositing dish obtains a final rinse out with distilled water, and the mirror is flooded with a little rectified alcohol, applied twice and "whirled" off each time between fingers and thumb, after which it is placed in the bottom of the dish surrounded by the frame of wax. The mixing of the two solutions can be done rapidly by pouring twice or thrice from one clean vessel to another, and back.

The depositing dish may rest on any fairly level place, and the mixed solution should be poured on and off again twice before the dish is allowed to rest. This minimises streaks and "oyster" markings. Allow to rest, covered with a clean card or glass, for six minutes; then pour off into a clean vessel, take out the mirror from the depositing dish and rinse under the tap, rubbing the silvering with a light pledget of non-absorbent cotton-wool, using hardly the weight even of the cotton-wool. This must all be very rapidly done, since the deposition of the silver is proceeding apace and must not be wasted. The mirror is rinsed again back and front with distilled water and returned to the dish,

the solution being put in again as before. The mirror rests here for a further fourteen minutes, after which it is removed again, rinsed and rubbed with cotton-wool.

Further immersion in the depositing solution already used would be to the detriment of the finished mirror, since there is thrown down a dirty brown precipitate which I find affects the coating through its whole thickness, and is proof against all attempts at polishing.

If the silver coating is not deemed opaque enough (hold it in front of a gas flame in order to judge opacity), mix the other $2\frac{1}{2}$ oz. each of the silver and reducing solution and proceed again, exactly as before. If reasonable care has been observed a silver film of absolute opacity will be produced. This (after a final delicate rubbing under the tap with cotton-wool) is flooded with more distilled water and rectified alcohol, and fanned dry, resting with one edge on clean blotting paper. Polishing is done in the ordinary way with warmed rouge on the warm mirror, making rapid circles with lightest pressure, going uniformly over the whole surface. A good test for perfect deposition and polishing is to stand with back to the source of light, looking at one's own reflection. In this position the mirror's surface should be practically invisible. Any haze whatever means so much of a fog-producing element, detrimental to clear results in the finished work, and making the shadow dots (in half-tone) unduly strong.

ANOTHER COLORS OF NATURE METHOD.

THERE has been more quackery in connection with photography in the colors of nature than with any other phase of the art, but surely the following takes the cake. It seems to have been communicated to the *New York Press* by Sterling Heilig and reproduced in full by *The Photographer*, and we are induced to follow the example, partly to fill up during holiday time and partly as a puzzle to our readers; the puzzle being to decide whether the author of the article is a K—— or a F——. As to the *New York Press*, the paper that accepted and presumably paid for the fable, there can be no question as to its acquaintance with the possibilities of photography:

Paris, July 21.

I have just made a photograph in the colors of nature.

No dabbing on of paint, but the direct chemical effect of light-waves, you must understand. No Cros or Ducos de Hauron "three printing," no Lippmann "screen," but a magical piece of newly-invented sensitive paper.

All Paris is making photographs in color. Every boy and girl who has a camera is hunting up his or her favorite old negative to print them in the hues of nature. In the street, in cafes, in business houses men take gorgeous proofs out of their pockets and pass them around. "My own work!" Fine ladies, also at five o'clock teas.

Literally, it is the sensation of the hour. The daily papers devote columns to it. It is a wonderful discovery, or, invention nothing less than a revolution in photography.

You have heard of photographs in colors heretofore—the delicate, half-success of Lippmann and the ingenious manipulations of Charles Cros and Ducos de Hauron.

M. Lippman, by utilizing the interfering qualities of thin screens, arrived at direct color photographs; but his process, marvelous as it is from the point of view of

pure science, is not generally practical. It is of an unimaginable delicacy—a laboratory curiosity, and each time when one print has been made you must begin all over again.

The "three printings" process was discovered the same day by two Frenchmen who did not know each other—Charles Cros and Ducos de Hauron. This is indirect photography in colors. It, too, is of immense delicacy.

The new plaything of Parisians is different from all these. How utterly novel it is may be judged from one detail—to bring out the colors you must dip the printed paper in hot water! The thing is the invention of an Austrian savant named De Slavick, working in conjunction with a German savant named Hezekiel—Dr. Hezekiel.

Dr. Hezekiel and Professor de Slavick worked the new discovery (or invention) up to the point of true commercial practicability. Then they sprang it suddenly on Paris, Berlin, Vienna and Rome in one day.

That was day before yesterday. Yesterday afternoon I got my first packet of their marvelous sensitive paper. And this is how I made my first photograph in colors.

I will tell you in advance, until you get a certain practice in the operation, it is best to choose one of your best negatives—one that is neither too hard, under or over exposed or clouded.

You begin the night before—but don't get scared. It is not difficult. You take an exact litre of water. In it you put twenty-five grammes of crystallized bichromate of potash and twelve grammes of pure ammonia. When these are completely dissolved in the litre of water, you take your pieces of the newly invented sensitive paper, plunge them into the solution just three minutes, avoiding the formation of air bubbles. At the end of three minutes take them out by the corner, let them drip, and

then hang them to dry in a cool, dark place—any closet. The paper dries during the night. In the morning when it has just got dry it is "sensitive"—and ready for use.

It was only this morning that I began printing. The new paper is black. It stays black while the sunlight prints its rays into it. You cannot watch the progress of the printing, as in ordinary photography, to judge if it be done yet. Therefore you must use a photometer. A photometer is a little machine that costs forty cents.

I began according to the printed directions. I fed a little band of ordinary sensitive paper into the photometer. Then I chose a good negative—a landscape with two human figures in it. I put it in the printing frame. I put a square of the new paper next to it. At the same moment I exposed it to the light, I started the photometer. You must not print in direct sunlight, but in shadow.

It being a good negative, I waited until the division 16-17 appeared on the photometer. Had the negative been hard I ought to have waited for the 20-21 division; if clouded, the divisions 12-13. The sun's rays had done their mysterious work. I believed so, I hoped so—I was following the directions.

I took the still black paper from the printing frame and pressed it exactly against a corresponding sheet of white paper (called *papier de report*). Then I dipped the two (stuck thus together) into cold water, just long enough to wet them so they stuck together.

Immediately I slapped them (still sticking together) on a flat plate of glass; and my next three minutes were occupied in scraping over them with a rubber scraper (no roller), in order to make the two pieces of paper adhere tightly to each other, with no air bubbles between them, tight, tight—so that they seem to form one.

I was now ready for the last magical manipulation—the fairy surprise. You must try it yourself to appreciate the won-

der of it, for most certainly it is a revelation in photography.

My side-partner had prepared a basin of hot water. You never heard of such a thing as that before, did you? Where photographic *genetaine* is concerned, it seems outrageous. My side-partner had cold water in a pitcher. With the aid of a thermometer she brought the mixture of hot and cold water to exactly 40 degrees centigrade. Do not forget that.

Into this basin of water at 40 degrees centigrade I dipped the stuck-together papers. Just an instant! At the same time I squeezed out the corners. When I saw it began to sweat red I began to pull the papers apart, diagonally, beginning at the corner. This must be done while holding them still under the water. In a moment I had the papers separated. Throwing the useless one away, I kept the true print. Now it was a vague red.

My side-partner continued to keep the water always at 40 degrees centigrade by adding a little hot water now and then. I continued to soak the vague red print in this water for a few minutes more, the red side down. I pulled it out, still red. I placed it flat on a plate of glass, red side up. And, following the directions, I began and continued pouring a little stream of the 40-degree water over it, by means of a little glass funnel.

Wonder of wonders! Little by little the colors began appearing. Little by little the photograph in colors began showing. Little by little the miracle took place beneath our eyes!

There was the blue sky with its white clouds, the dark green of far-off foliage that shaded, tone by tone, into the fair bright green of near-by leaves, the trunks of trees in their right shades, rocks, roads, dust, flowers, flowing water, with its glint of sunlight.

Little by little the colors came out. Following the directions I took a camel's-hair brush, dipped it in the 40-degree water and painted the print where the tints were long

in coming. And so, gently, magically, I made my first photograph in colors.

There was nothing else to do. No fixing. You have only to wash the perfect photograph in cold water.

And now the explanation of it.

This extraordinary new photographic paper of Dr. Hezekiel and Professor de Slavick is manufactured in two classes—one for landscapes and the other for portraits. By landscapes is meant the ordinary amateur photograph. Both kinds—landscape and portrait—have the quality of filtering, so to speak, and of isolating colors.

If we could examine the manufacture of one of these magic slips of photographic paper we would see that it is covered with ten layers of appropriate chemical coatings. These ten layers of chemical coatings are separated each from the other by coats of soluble gelatine.

Each layer of chemical coating corresponds to the length of a certain light wave—that is to say, to a certain shade of color.

You can thus see how the light waves, attacking the chemical layers more or less profoundly, work to produce the colors. According as the waves are those producing red, blue, green, etc., their vibrations are more or less stopped in their passage through the layers.

We might liken these chemical layers to ten superimposed sieves of different calibres. If such different calibres should correspond to different sizes of grains of sand, first greater, then smaller, you can see how

the different sizes passing through them would in the end become all sorted.

It is not so difficult, therefore, to comprehend in theory the effect of the negative on the magic paper. According to its gradations—which in ordinary photography produce in printing only shades of black and white—the color waves of different lengths pass through it with different forces, and the magic paper collects and filters them, so to say.

So it is in theory. In practice the whole thing remains a kind of magic long after one has acquired the trick. The thing seems incredible.

Yet here we are producing photographs in color. And I cannot express the surprise and delight of the amateur photographer, when he has followed the directions, as the first vague red of the print seems to magically melt into the blue of the sky, the white gradations of clouds and all the varying shades of a real landscape. For remember that it is only as the colors appear that the photographic outlines themselves appear. Thus the perfect colored photograph gives you the effect of jumping out of vague red nothingness as you continue to trickle the hot water over it.

In Vienna there is the same craze as here in Paris. Berlin also. They begin to-day, I hear, in London. Possibly the new paper will be within your own reach in America before these lines are printed. It is making nothing less than a great revolution in photography.

STERLING HEILIG.

ANIMATED PHOTOGRAPHY FORETOLD IN 1860.

THE editor of *The Photographic News* has been looking over his back numbers and found that animated photography was clearly foretold in 1860, Sir John F. W. Herschel being the prophet. The following is what he wrote for *The*

Photographic News on the 11th of May in that year:

"What I have to propose may appear a dream; but it has at least the merit of being a possible, and, perhaps, a realizable one. Realizable, that is to say, by an

adequate sacrifice of time, trouble, mechanism and outlay. It is the stereoscopic representation of scenes in action. The vivid and lifelike reproduction, and handing down to the latest posterity of any transaction in real life—a battle, a debate, a public solemnity, a pugilistic conflict, a harvest home, a launch—anything, in short, where any matter of interest is enacted within a reasonably short time, which may be seen from a 'single point of view.' I take for granted nothing more than: First, what photography has already realized, or we may be sure it will realize within some very limited lapse of time from the present date—viz., the possibility of taking a photograph, as it were by a snap-shot—of securing a picture in a tenth of a second of time. Secondly, that a mechanism is possible, no matter how complex or costly—and perhaps it need not be either the one or the other—by which a prepared plate may be presented, focussed, impressed, displaced, numbered, secured in the dark, and replaced by another within two or three-tenths of a second. In fact, the dismounting and replacing need only be performed within this interval; the other items of the process, however numerous, following these up in succession, and collectively spreading over as long 'a time as may be needful.' There is a pretty optical apparatus, called a phenakistiscope, which presents a succession of pictures to the eye, by placing them on a wheel behind a screen, and bringing each in succession to an opening like a picture frame, in the screen, of

the size of the picture, and so allowing it to be seen. The eye is, in like manner, covered by a dark revolving screen, having narrow linear openings in it which allow glimpses through them precisely *at*—and only *at*—the moment when the pictures are in the act of transiting the frame, and, sensibly, in the middle of its area. By this arrangement it has been found possible to exhibit figures in action; as dancers pirouetting, wheels revolving, etc., by having prepared a set of figures taken from one model presented on various angles to the visual ray. Coarse as the representations so made have been, the apparent reality of the movements has been very striking. The persistence of the impression on the retina, and its gradual fading obliterates or glosses over the *hiatus* in a way which *a priori* would hardly be thought credible. Now, there is nothing in the law of periodicity, as regards the movement of the model, to influence the result; and we have only to substitute for such a periodically recurrent set of pictures imperfectly drawn by hand, and presented to one eye, perfect stereoscopic and simultaneous pairs of photographs duly presented to both eyes in their natural order of succession, to produce a stereoscope in 'action.'"

The moving figure part of this prophecy has for some years now been fulfilled to the letter, and from an illustrated article by Theodore Brown in a recent number of *Photography*, there seems a probability of the stereoscopic vitagraph soon becoming an accomplished fact.

ALBANY AMATEUR PHOTOGRAPHIC EXHIBITION.

The Albany (N. Y.) Chamber of Commerce has made, for such institutions, a new departure; the organization of an exhibition of amateur photography, which, according to the secretary, is expected to be "exceedingly beneficial to the city."

There will be a prize exhibition of photographs by amateur photographers in the

rooms of the Chamber of Commerce, 95 State street, Albany, from October 17 to October 29, 1904.

RULES.—This photographic exhibit shall consist of pictures of park, boulevard and street scenes in the city of Albany, also exterior and interior views of churches and public buildings in the city.

All pictures entered are to be taken and finished by the person making the entry. Pictures to be mounted, but not framed behind glass.

Amateur photographers desiring to contest for the Grand Prizes must enter six pictures—these pictures will be judged in a group and the prizes will be awarded to the person having the best set of pictures.

Amateurs may enter less than six pictures in competition for the special prizes, but these will not be eligible for the Grand Prizes.

Amateurs intending to compete for a prize must send their pictures to the rooms of the Chamber of Commerce, 95 State street, on or before Wednesday, October 12, 1904. All pictures entered must be marked on the back by a "nom-de-plume;" the correct name and address of the exhibitor to be enclosed in a sealed envelope with the "nom-de-plume" on the outside and handed in with the pictures. Amateurs under 16 years of age are asked to mark their age on back of pictures they may exhibit.

All competing pictures are to become the property of the Albany Chamber of Commerce. No prints to be returned.

Grand Prizes offered by the Chamber of Commerce: First Grand Prize, for the best group of six pictures, a handsome burnished, gold-lined loving cup. Second Grand Prize, for the second best group of pictures, a polished metal loving cup.

Special Prizes: A—For the best picture of the interior of a church or public building in the entire exhibit, a Goerz double anastigmat lens, 5x7. B—For the best exterior of a church or public building in the

entire exhibit, a Century camera with lens, Model 41, size 5x7. C—For the best view in Washington Park, 12 dozen sheets, 5x7, Aristo self-toning paper. D—For the best picture in the entire exhibit taken by an amateur photographer under sixteen years of age, a No. 3 Cartridge kodak camera with lens, $4\frac{1}{4} \times 3\frac{3}{4}$, for films or plates.

So far as we know this is the first exhibition the exhibits of which were confined to a limited locality or city, and to that there can be no exception, but not so with the last paragraph of the rules to be observed. While it is true that photographs, some kinds of them at least, are of little value, the members of the Chamber of Commerce think them worth less than they are if they expect to secure anything like a passable series of views of Washington Park. for the chance of getting a gross of 5x7 self-toning aristo paper.

It is all very well to claim the right to reproduce, or even the copyright of *the particular picture or set of pictures to which the prize has been awarded*, but we must protest against the all too common method adopted by some papers and magazines of attempting to secure valuable pictures and even "copy" for the mere chance of getting trifling prizes.

There may be conditions connected with this Chamber of Commerce Exhibition unknown to us that make it an exception to those to which we more particularly allude, but it is difficult to imagine anything that could warrant the appropriation of all the exhibits, or to blame the unsuccessful exhibitor for feeling that such appropriation is something akin to "adding insult to injury."

THE THOUSAND DOLLAR KODAK COMPETITION.

A detailed report of the results of the £1000 Kodak Competition has been received in this country and the results cannot but prove gratifying to those who take an interest in the advancement of American

photography. There were something over 20,000 entries received, of which about 12,000 were from the British Isles, 2,500 from France, 2,000 from the United States, 1,700 from Germany and 2,000 scattering.

The British Isles received 229 prizes, the United States 85 prizes, France 28 and Germany 12. It will thus be seen that the British exhibitors received one prize to every 52 entries, the French one to every 89, the German one to every 141 and the American one to every 23 entries. Our American amateurs, in proportion to their entries, carried off over twice as much as their British cousins, three and a half times as much as the French competitors and did six times as well as the German—at least such was the opinion of the British judges who were no less personages than Sir William Abney, Mr. Craig Annan and Mr. F. M. Sutcliffe.

In their awards the judges diverted some of the prizes in Class B of the Kodoid Competition and in both classes of the Developing Machine Competition to the N. C. Film and Kodoid sections.

We are informed that Kodak Limited will make a display of the best work at the Kodak Galleries, 40 Strand, continuing same for several weeks.

The list of American prize winners follows:

N. C. FILM COMPETITION—CLASS "A."

- 8rd Prize. Miss Laura Adams Armer, 1811 Arch St., Berkeley, Cal.
- 7th Prize. Mrs. Helen W. Cooke, 381 Angell St., Providence, R. I.
- 8th Prize. John S. Neary, Trenton, N. J.
- 10th Prize. D. J. Cartwright, 80 Kilby St., Boston, Mass.
- 12th Prize. Geo. Adamson, Walkerton, Ontario.
- 14th Prize. Thos. A. Morgan, 207 Century Bldg., Denver, Colo.
- 20th Prize. Geo. F. Fisher, Tucson, Ariz.
- 22nd Prize. Albert H. Moberg, 945 Seminary Ave., Chicago, Ill.
- 23rd Prize. Miss Nellie Coutant, 705 S. Water St., Crawfordsville, Ind.
- 24th Prize. Wm. C. Motteram, 1804 Wellington St., Philadelphia, Pa.
- 32nd Prize. Miss H. B. Cole, 437 East State St., Trenton, N. J.
- 33rd Prize. Robt. G. Klotz, 42 E. 22nd St., New York City.
- 37th Prize. Eldred M. Keays, Ann Arbor, Mich.
- 41st Prize. Louis J. Christie, Quincy, Ill.
- 42nd Prize. Henry S. Whitney, 179 S. California Ave., Chicago, Ill.
- 45th Prize. H. A. Rothrock, West Chester, Pa.
- 50th Prize. H. B. Conyers, Urbana, Ohio.
- 51st Prize. Dr. A. R. Benedict, Montclair, N. J.
- 54th Prize. Ethyl Amelye Welzel, 5 E. Fourth St., Williamsport, Pa.

- 55th Prize. Chas. Ziegler, 1237 Wilcox Ave., Chicago, Ill.

N. C. FILM COMPETITION—CLASS "B."

- 1st Prize. John Dolman, 1828 Chestnut St., Philadelphia, Pa.
- 4th Prize. Walter Zimmerman, 10 S. 18th St., Philadelphia, Pa.
- 9th Prize. Mrs. Nancy Ford Cones, Covington, Ky.
- 18th Prize. Edgar J. Parker, West Chester, Pa.
- 22nd Prize. H. Mortimer Lamb, Victoria, B. C.
- 23rd Prize. Thos. A. Morgan, 207 Century Bldg., Denver, Colo.
- 24th Prize. Geo. L. Beam, Pass. Dept. D. & R. G. R. R., Denver, Colo.
- 25th Prize. Laurence Osgood Macomber, 82 S. Pasadena Ave., Pasadena, Cal.
- 28th Prize. Miss Florence Howland, Conway, Mass.
- 36th Prize. Chas. M. Carter, 617 Kittredge Bldg., Denver, Colo.
- 43rd Prize. H. B. Conyers, Urbana, Ohio.
- 50th Prize. Miss Grace E. Mounts, Morrow, Ohio.
- 55th Prize. Mrs. Helen W. Cooke, 381 Angell St., Providence, R. I.
- 59th Prize. John S. Neary, Trenton, N. J.

N. C. FILM COMPETITION—CLASS "C."

- 2nd Prize. A. S. Howard, 40 Wesleyan Ave., Providence, R. I.
- 6th Prize. Laurence Ridges, 40 West N. Temple St., Salt Lake City, Utah.
- 7th Prize. Miss Laura Adams Armer, 1811 Arch St., Berkeley, Cal.
- 9th Prize. Mrs. L. R. Graham, Pittsfield, Ill.
- 10th Prize. Miss Nellie Coutant, 705 S. Water St., Crawfordsville, Ind.
- 13th Prize. Thos. A. Morgan, 207 Century Bldg., Denver, Colo.
- 19th Prize. Gustave Moeller, 1610 Villet St., Milwaukee, Wis.
- 21st Prize. John Schuler, 180 Park Place, Akron, Ohio.
- 22nd Prize. H. B. Conyers, Urbana, Ohio.
- 29th Prize. Chas. H. Loeber, 15 E. 17th St., New York, N. Y.
- 32nd Prize. Miss Elizabeth Hill, 108 Ocean Ave., Woodsford, Me.

N. C. FILM COMPETITION—CLASS "D."

- 2nd Prize. Miss Laura Adams Armer, 1811 Arch St., Berkeley, Cal.
- 8th Prize. Wm. C. Motteram, 1504 Wellington St., Philadelphia, Pa.
- 13th Prize. Walter Zimmerman, 10 S. 18th St., Philadelphia, Pa.
- 14th Prize. Annie W. Brigman, 674 32nd St., Oakland, Cal.
- 17th Prize. H. B. Conyers, Urbana, Ohio.
- 20th Prize. Geo. L. Beam, Pass. Dept., D. & R. G. R. R., Denver, Colo.
- 21st Prize. Thos. A. Morgan, 201 Century Bldg., Denver, Colo.
- 27th Prize. Laurence O. Macomber, 82 S. Pasadena Ave., Pasadena, Cal.
- 35th Prize. Mrs. Myra A. Wiggins, Salem, Ore.
- 36th Prize. Miss H. B. Cole, 437 E. State St., Trenton, N. J.

KODOID PLATE—CLASS "A."

- 2nd Prize. Miss Laura Adams Armer, 1811 Arch St., Berkeley, Cal.
- 8th Prize. Thos. A. Morgan, 207 Century Bldg., Denver, Colo.

- 10th Prize. H. Mortimer Lamb, Victoria, B. C.
 15th Prize. Walter Zimmerman, 10 S. 18th St., Philadelphia, Pa.
 16th Prize. S. R. Carter, 665 Huron St., Toronto, Canada.
 28th Prize. Chas. E. Wallace, 307 E. Court St., Urbana, Ohio.
 32nd Prize. Harry C. Rubincam, 207 Century Bldg., Denver, Colo.
 44th Prize. Chas. S. Price, 315 Sherman Ave., Denver, Colo.
 49th Prize. Dr. A. R. Benedict, Montclair, N. J.
 56th Prize. Harold A. Ray, 360 W. 58th St., New York City.
 73rd Prize. Will E. Gladwish, 537 Cadieux St., Montreal, Can.
 74th Prize. Sumner W. Matteson, St. Paul, Minn.
 75th Prize. Mrs. L. R. Graham, Pittsfield, Ill.

KODOID PLATE—CLASS "B."

- 2nd Prize. D. J. Cartwright, 30 Kilby St., Boston, Mass.
 21st Prize. Louis R. Murrya, Ogdensburg, N. Y.

DEVELOPING MACHINE—CLASS "A."

- 2nd Prize. Miss Nellie Coutant, 705 S. Water St., Crawfordsville, Ind.

DEVELOPING MACHINE—CLASS "B."

- 2nd Prize. Miss Nellie Coutant, 705 S. Water St., Crawfordsville, Ind.
 8th Prize. Harry R. Cate, 36 Hamilton Ave., Haverhill, Mass.
 11th Prize. Mrs. L. R. Graham, Pittsfield, Ill.

SPECIAL PRIZES.

- T. G. Cochrane, 6 Washington St., Morristown, N. J.
 Miss Louise V. Hitchcock, 661 Palisade Ave., Yonkers, N. Y.
 J. Brunner, Pine Grove P. O., Fergus, Mont.
 Henry Troth, 4037 Locust St., Philadelphia, Pa.
 Wm. C. Motteram, 1604 Wellington St., Philadelphia, Pa.
 Laurence G. Reid, Greenwich, N. Y.
 H. C. Rubincam, 207 Century Bldg., Denver, Colo.
 Miss H. B. Cole, 437 East State St., Trenton, N. J.
 G. F. Fisher, Tucson, Ariz.

P. A. OF A. CONVENTION AT ST. LOUIS.

Are you ready for the World's Fair Convention?

The time is drawing near for the Convention of the Photographers' Association of America, and if you have not made ready, you should do so at once, for this convention will be a good one, a pleasant one, and will be a loss to you if you miss it.

Some of the points of interest are:

A Select Exhibition of Pictures from all quarters of the country.

A Review of the Pictures in the Fine Arts Gallery of the World's Fair by Professor Griffith.

Exhibition of Color Photography, something new.

Manufacturers' and Dealers' Day, in which to examine all that is new in photographic apparatus.

Half-day sessions only, which will be held on schedule time.

The convention will be held in the buildings of the Forest Park University, which have been converted into a hotel for the Fair period, and is near the Southeast Entrance to the Fair Grounds, and on the car lines that run West from the Union Station. (Take the Laclede or Market Street cars for the hotel.)

To avoid delays and mistakes in shipping, send to the Secretary, George G. Holloway, Terre Haute, Ind., for shipping labels.

Pack your pictures securely and have return address on the cover.

Pictures for the Art Exhibit should be shipped to Chas. W. Hearn, FOREST PARK UNIVERSITY HOTEL, St. Louis, Mo., in care of Fowler's Transfer.

All goods for the Manufacturers' and Dealers' Display should be shipped in care of the Secretary, George G. Holloway, directed as above, and in all cases Transportation Charges must be paid.

Goods sent in care of Fowler's Transfer will be taken direct to the Hotel, otherwise they may be held in the city offices, several miles from the convention hall.

Pay your dues to the Treasurer, Frank R. Barrows, 1873 Dorchester Avenue, Boston, Mass., and get your receipt and order for hotel accommodations beforehand.

Remember the date, October 3rd to 8th, inclusive.

G. R. REEVES, President,
 Anderson, Indiana.

GEORGE G. HOLLOWAY, Secretary,
 Terre Haute, Indiana.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1802, U. W. MIKESELL.—"Innocence," a child with flowers in both hands, one of which is held up in such a way as to partly cover the face with part of her dress, is not as satisfactory as a little more care and thought might have made it. The pho-

the open they should be left to themselves, the photographer watching and waiting for the time to snap, and snapping only when it comes; always remembering that the simpler the dress the better.

1803, F. L. SMITH—"When Frost is King" is beyond our comprehension, although there is on the left a triangle of what may be snow or ice and a mass of apparently hoar frost covered branches, an equal triangle on the right being simply a blank a little lower in tone than the equally blank sky. We can see beauty in diffusion as well as in definition, but in this there is neither the one nor the other; nor does further study, to us at least, make it anything but a meaningless print without either light or shade in the true sense of the words.

tography is fairly good, and that is about the only good that can be said of it. The background is distracting; the pose is too evidently arranged to seem natural; the two black stumps that do duty for legs are serious blots; and the child is over dressed for the purpose. In snapping children in

1804, F. SOLOMAN—"City Park" is an excellent photograph of the "Record" variety in which the technique could hardly be bettered. From a pictorial point of view, however, there is far too much uninteresting foreground, or rather forewater, good although it is; and three-quarters of an inch from it given to the sky would have been a decided improvement.

and never forget that the foregrounds play an important part in picture making.

1807, W. A. YAUCH.—"Meditation," a chicken intently examining a half of the shell from which it has, presumably just emerged, is a triumph of photographic technique, and a most interesting little picture with only one fault, too much vacant space above. An inch trimmed from the top improves the placing very much. If it were ours, we should enlarge it three or four diameters, and consider it one of the gems of our collection. The other in our next.

1808, J. P. KELLEY.—"Sunshine and Shadow" is a fairly good photograph of a too ambitious subject; a subject that, properly arranged might have made two good pictures, but as it is, includes far too much for one and with no one of its many objects of more importance than another. It is simply a mass of lights and darks, all of about equal intensity and about equally scattered over the print; all of which is seen at the first glance and none of which tempts us to examine it a second time. You have mastered the technique of the art, and should now learn something about how to employ it in picture making.

1809, W. E. MARSHALL.—"In the Shade of the Palms" bears out its title in a way different from what you intended, the figures being buried in nearly universal blackness, not from shade, however, but from under exposure. It is strange how you cannot see this as well as we, as whatever is in direct light is as white as paper can be made, while all else is equally black. Subject and arrangement are faultless, and with twice or thrice the exposure you would have had a pretty little picture.

1810, L. T. BUNNELL.—"Simply a Child" is only a part of one as she wants a leg. She may be a very nice girl for all that, but there was no need to seat her on a projecting rock and so arrange her as to emphasize the deformity. Joking aside, the photograph is simply worthless from under

1805, HARRY V. KENWOOD.—"December Mist and Gloom" bears out the title well, the "gloom" part of it at least, although the definition of the distance is hardly suggestive of "mist." We feel, however, as if the guardians of the scene, the trees, lose their dignity somewhat by the excess of foreground, an excess that is not only useless, but that takes the horizon too near the middle of the print. Few pictures could stand being by the horizon line divided into two equal parts as this is, and an inch and a half less foreground would be a great improvement. But for that, in our opinion, serious fault, we should like the picture very much.

1806, G. G. MELLON.—"Winter Twilight" would impress us more favorably could we make anything of the foreground. The uniform grey may be snow although there is no indication of it except in the title, and it would have been so easy to have trodden a path. Then, even in twilight, the trees are neither in black nor so blurred. You should expose longer and focus better,

MEDITATION.

W. A. Yauch.

SUNSHINE AND SHADOW.

J. P. Kelley.

exposure. Three or four times the exposure and development in a solution weak in reducer would have given you a very different result.

1812, A. WILLIAMS—"A Summer Day" is a fairly good photograph, with two serious faults: so much under exposed as to leave trees simply black and sky and water equally white, with an equal mass of foliage on each side, as equal as a pair of scales. A snip with scissors vertically through the middle would give two pictures each very much better than as it is. With a point of view a little to either the right or left of this, and two or three times more exposure you might have had a very nice little picture.

1811, D. S. CLEAVER—"Buttermilk Falls." We cannot guess at your aim here, nor can we consider it a success from any point of view. As said above, we can appreciate diffusion, but this is too much out of focus for any purpose, inducing a feeling of repulsion rather than a desire to understand it. The oblong for such a fall is also a mistake, as it tends to dwarf it while the upright would have added dignity. The white spots scattered all over the water may be flecks of froth, but they look more like faults of technique and should have been avoided.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol, Tioga Centre, N. Y.

THE PHOTO-MINIATURE, No. 62, deals with "Vacation Photography," and should be of use to the thoughtless or less self-reliant, although, generally speaking, its suggestions and recommendations are so self-evident as to make this particular number less of a necessity than any of its predecessors. Nor in the few cases where advice from the experienced would be of advantage is it always of the best. For photography waterfalls, for instance, with dark surroundings several plans are sug-

gested, although nothing is said of the best and indeed the only one by which good results is possible—the making of two negatives and combined printing, or printing from the combined negative.

* * *

THE PRACTICAL PHOTOGRAPHER (American edition) for July deals with the "After Treatment of the Negative," mainly with intensification and reduction, in a symposium by some six or eight experienced photographers with voluminous notes by the

editor. The pictorialist chosen for appreciative notice in the number is R. Demachy, and seven excellent examples of his work show that he well deserves all that is said in his favor. The number is well worth getting and keeping as a ready reference.

Nor is No. 63 less interesting, dealing, as it does with "Photography in Advertising," and showing that in that phase of the art the right kind of amateur may find not only a congenial "change of occupation," but also a means of materially adding to the contents of his purse. The keynote of the business is found in the following paragraph on page 145, and we may add that the whole tenor of the monograph is to show that the amateur is generally better equipped for the work than the professional.

"The highest aim of the photographer, whether professional or amateur, should be to merge the real with the ideal in such proportions as will lift the picture above the commonplace; and to produce pictures for illustration or advertising which will stand out from pages of reading matter as the vital points which give emphasis, suggest, invite, attract, and finally please the reader. To embody these features and to crystalize all this and more into an illustration; that is art—the art of photography in illustrating and advertising."

To the right kind of amateur the investment of twenty-five cents in *Photo-Miniature*, No. 63, will be the casting of bread upon the waters that will return after not too many days.

* * *

WITH THE CAMERA.—This month's notes of the Illinois College of Photography tells of the continued success of its graduates, some in positions, and some in studios of their own; of visits from Mr. Holloway, Secretary of the P. A. of A., and Nichols, of flash machine fame, and of many former pupils. It tells also of certain life partnerships, showing happy results from the kind of co-education that seems not unknown in the college. Long life and much happiness to them.

MME. GABRIELLE REJANE who is termed "the idol of Paris," will appear in a ten weeks' tour in this country during the fall under the management of Liebler & Co. Mme. Rejane will bring her own company and scenery and reproduce her great Parisian successes in a manner that will no doubt captivate the American public. The accompanying photograph by the Sarony Studio represents a pose in one of the plays.

AFTER months of work, with the sole idea of formulating a genuinely practicable plan of teaching thoroughly and successfully his system of "One Man Method" Photography as practiced by him first in little towns, then larger ones, and finally on Fifth Avenue, New York City, during the past nine years, Mr. Milton Waide, of 164 Fifth Avenue, New York, presents to those interested in photography, beginner, amateur or professional, a perfected plan of instruction, including his entire method and business system, taught from afar at a very low tuition price. His plan of instruction includes five "proceedings" explained fully in a "Prospectus" mailed to any one upon request, which in itself contains valuable suggestions and half-tone illustrations of his novel print and mount effects, made by him under *his* light and by his pupils with *home window* illumination. The teaching puts into the pupil's hands *ideal negatives* for platinum and carbon effects on artificial light developing papers, prints therefrom in original mounting and folder effects, material to make trials with, in fact, it consists in a carefully devised plan of exchange, criticism and suggestion, by use of the mail and express as carriers back and forth, including business hints, devices used, general helps and aids, answering of questions, use of his copyrighted Booklet for customers, etc., etc.—his interest in the pupil's success not ceasing until he is satisfied that the "Method" is *thoroughly mastered*. Send for the "Prospectus;" it tells it *all*, and if done at once, the holiday season may find you trying the value such a method offers.

* * *

Among the most handsome, as well as interesting exhibits at the Fair is that of the G. Cramer Dry Plate Co. located in the Palace of Liberal Arts Block fifty three, at the intersection of Aisle G and Aisle four. This exhibit, which is the only one of its kind at the World's Fair, consists of a large number of the finest photographs and a number of exquisitely beautiful

transparencies, all made by the foremost photographers and artists of this country, on the famous Cramer Plate. This exhibit must be seen to be appreciated, and we would, therefore, strongly urge any of our readers who attend the Fair to be sure and visit this very interesting display, feeling confident that what they see there will amply repay them for their visit.

The Cramer Co. have advised us that they will be much pleased to have visiting photographers to the World's Fair call at their magnificent establishment at the corner of Lemp avenue and Shenandoah street where a most cordial welcome awaits any visitor.

* * *

THE BRITISH JOURNAL ALMANAC for 1905 is now in preparation and this mammoth Annual bids fair to become as bulky if not more so than in former years. The book will have something over 1500 pages incredible as it may seem. In spite of its great number of pages the price of the British Journal Almanac remains unchanged at 50c. for paper, \$1.00 for cloth binding, postage 28c., at which price it may be ordered from any dealer. Mr. G. Gennert, the American distributing agent, 24 and 26 East 13th Street, New York, assures us that the American supply is positively limited to 2000 copies, and as this is only one copy to every six photographers in the United States, it follows that, as was the case last year, the book will be sold out before the supply is received. Photographers are urged to order of their dealer at once, to avoid disappointment.

J. F. ADAMS, the well-known Buffalo photo supply dealer has leased a new store at 564 Main street. Here amateurs will always find a full line of supplies and dark-room accommodations. The professional and wholesale branch of the business will be conducted at 459 Washington street, as heretofore.

LETTERS TO THE EDITORS.

"The Lotos Club," 558 Fifth Avenue,
August 13, 1904.

EDITOR CAMERA AND DARK-ROOM:

DEAR SIR—I can now positively assure you that the first American Photographic Salon will be the most important showing of *American* work ever made, and will undoubtedly establish a new order of pictorial photography in this country, with new workers incomparably greater than those who have hitherto succeeded in preventing the recognition of all except their own little self-exploiting clique.

Probably many of the greatest foreign workers will allow themselves to be misled by the adroit schemer who has succeeded in keeping their work out of this country until now, and who never would have invited their co-operation were it not for the new movement which I have the honor to represent.

Careful scheming has prevented the American public from having a chance to compare the work of great foreign masters with that of the half dozen relics of last century who make up the whole pictorial part of the secession.

The attitude of the English *Amateur Photographer* is no doubt inspired by the plum which this party has been *forced* to dangle before them *by us*, as a last resort, and for the first time.

We did not invite any friction and were contented to attend to our own business.

In our opinion the only *fair* jury of high standing—the only one that cannot be suspected of prejudice as things are now—is a jury of painters. In our Salon technic is to have no part. All entries will be judged as pictures only. Probably any but a bigot will feel compelled to admit that these twenty most distinguished artists in America are *better* able to judge *pictures* than any of the members of the Secession. In *my* opinion the best judges for Photographic *Salons* are the best *artists*.

We are not inviting squabbles, but will try to give a good account of ourselves if others are seeking trouble.

Yours sincerely,

CURTIS BELL.

NEW YORK, N. Y.

Editor AMERICAN AMATEUR PHOTOGRAPHER,

Dear Sir: Will you kindly permit me a few lines of space to correct a certain impression that has been caused.

An article appearing in the August issue of the AMERICAN AMATEUR PHOTOGRAPHER under my name, has been so perverted and added to without my permission or knowledge that the whole tenor of my article has been changed. I have, consequently, no other recourse than to deny, *in toto*, the authorship of said article, calling upon Mr. Hartmann and the editor of the A. A. P. to assume responsibility for these unwarranted additions and alterations.

Very truly yours,
ROLAND ROOD.

AN OPEN LETTER.

EDS. AMERICAN AMATEUR PHOTOGRAPHER,

DEAR SIRs: An open letter from Mr. Roland Rood in the "*Photographer*" of August 20 invites an open reply. Mr. Rood repudiates "*in toto*" his article in the August number of the AMERICAN AMATEUR PHOTOGRAPHER, calling upon the editors and Mr. Sadakichi Hartmann to assume responsibility for "unwarranted additions and alterations."

First allow me to say that I alone am responsible for any alterations or additions to Mr. Rood's mss. and that neither the editors nor Mr. Hartmann put their pens to the article. In my capacity of preparing copy for the printer I had occasion to make

numerous corrections in Mr. Rood's manuscript so as to render it in "readable English." This was necessary both for the credit of the magazine and of Mr. Rood. No alterations were made that could in any way "alter the whole tenor of the article." If Mr. Rood thinks it would better his cause the article will be *reprinted verbatim* as it left his hands. The only addition to the article is the twenty lines at the top of page 348 referring to the work of Mr. Bell and the societies of which he is president. This addition I made because it brought the point in question more up to date, and it only reflected the opinions expressed by Mr. Rood when he addressed the meeting of the Federation of Camera Clubs in New York, at which meeting Mr. Bell presided.

Any one reading Mr. Rood's articles in this or any other photographic publication must realize that at times he is floundering out of his depths. In the article in question some of his similes were so (what shall I say—poetic!) that I did not for a mo-

ment think that Mr. Rood was serious; while his scattering of bouquets was so promiscuous that surely a tiny nosegay falling to the other side did not matter. But this is the key to the whole trouble, and it really provokes a smile which broadens to a grin when I turn over the pages of the "*Photographer*" and read the first editorial—the *unkindest cut of all!*

Verily, brother editor, when I desire to take lessons in "the code of honor" I will select a more able mentor than the editor of the "*Photographer*." Admitting that I erred in not submitting a revised proof to Mr. Rood, the ravenous manner in which the editor of the "*Photographer*" attacks his prey is direct proof of his aphorism that "one editor's meat may be another editor's poison." Truly a fitting application of Byron's well-known simile of the eagle being killed by an arrow tipped by one of its own feathers.

J. P. CHALMERS.

Asst. Editor,

AMERICAN AMATEUR PHOTOGRAPHER.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

Quality of Negative.

E. L. CHAMBERLAIN.—(1) The print gives evidence of under exposure of the negative in the too sharp contrasts of white and black, and especially by the uniform blackness of the distant trees. (2) Further development would only have increased the contrast. (3) On the supposition that the print is the best that could have been got from the negative we should not expect it possible to get from it a really good enlargement. Negatives for enlargement should be full of detail, with nothing but the highest of high lights opaque, and with nothing but the deepest of deep shadows as bare glass. You will be able to judge for yourself whether the negative in question answers the requirements.

Equivalent Focus of Lens.

M. R. WILSON.—There are several methods of ascertaining the equivalent focus of a lens, but one of the simplest methods is the following:—Focus on a distant object, and mark the position of the lens on the baseboard of the camera. Then focus a foot-rule as large as possible, and again mark the position of the lens front on the baseboard. Now take a negative and carefully measure the dimensions of the foot-rule in the negative. Multiply the difference between the two positions of the camera front by the length of the foot-rule, and divide by the length of the negative image, and the result will be the focus.

W. H. BLACER.—We have forwarded the letter as requested.

Difficulty in Copying.

B. L. GANZE.—You cannot focus the card to the size you want because the draw of the camera is too short. The nearer the card is to the lens the larger will be the image, but also the greater the distance between the lens and the focussing screen. You can overcome the difficulty by making a temporary length to the draw; a paper tube of suitable size and length between lens and front board will do.

Choice of Developer.

MARY H. CAMERON.—There is little to choose between any or all of the developers you mention, any one being just as good as another. Not the developer, but how it is employed, is of consequence, and the ultimate result will be practically the same no matter which is employed. Select one and stick to it. As perfect results may be made with edinol as with any other reducer in spite of what your dealer says. The opinion and advice were probably inspired by his not having edinol in stock.

Focal Fractions.

FRANK HYATT.—The figures on your shutter are the everywhere else abandoned U. S. or universal system numbers, and refer to the "focal fractions" of the stop apertures, generally called values. They were introduced by the Royal Photographic Society of Great Britain with an idea of making the calculation of exposures simpler; but abandoned several years ago in favor of the fractions themselves. The 4, 8, 16, 32, 64 and 128 on your shutter are respectively f-8, f-11, f-16, f-22, f-32 and f-45. F-8, for example implies that the aperture of that stop is one-eighth of the focal length of the lens; and so on. But a stop marked f-8 of an eight inch doublet lens should measure a little less than an inch, as the rays are slightly condensed by the front element.

ALBERT SYME.—The picture is an enlargement from about 3 x 4 inches of a 4 x 5 negative made by one of the single lenses of a plastigmat, about 14 inches focus. A carbon transparency was made by contact,

and from that the enlarged negative on bromide negative paper, the latter being waxed before printing.

Value of Lens.

RALPH BROWN.—The deep scratch on the front of the portrait lens, while materially lessening its commercial value, will have no practical influence on its working. Fill the scratch with black paint or anything that will stick, and it will be, for all practical purposes, as good as ever. We can form no idea of its value without more information than you have given. From its size we should say that it is a portrait lens of about 12-inch focus, and if so and the lenses perfect, except for the scratch, it must be well worth the twelve dollars.

It is probably of French manufacture, many of just such having been imported during the earlier days of photography.

JOE MILLAR.—Send the drawings and we shall be better able to give an opinion, but we have doubts as to your getting a patent. If we understand your description, we published something of the same kind many years ago in *The British Journal of Photography*. It was an automatic washer, in which prints were washed by its being placed under the tap. By the simple adjustment of a cock the arrangement was such that it filled itself and remained full for any predetermined time, emptied itself in a few seconds and allowed the prints to drain for an equally prearranged time, and again filled, soaked and drained. It was, in those days, often set to go all night, filling, soaking, emptying and draining to whatever rate desired.

Renovating Camera Bellows.

C. H. DICKENSON.—For stopping leaks in camera bellows the popular and simplest method is to paste over them a piece of black court plaster or even black paper, but that is hardly available for leaks in the corners. A varnish that is easily worked into them may be made as follows: In a strong solution of shellac in alcohol rub up sufficient lamp black, and to give it the

necessary flexibility, a trace of soap. This should be well rubbed up with a spatula on a slab or plate of glass and applied with a suitable brush. Instead of shellac in alcohol, albumen may be employed, but it takes a longer time to dry and is not, on the whole, so durable.

Combined Toning and Fixing.

J. H. MONTGOMERY.—The Combined Fixing and Toning Bath which we have used for years and which has been given again and again in the magazine, is simplicity itself, gives fine colors, and if not made to tone and fix more than there is gold sufficient, that is, after it is too nearly exhausted, will give prints as permanent as any other bath whether combined or separate. The formula is as follows:

Sodium hyposulphate	2 ounces
Water	16 ounces
Gold chloride	2 grains

Mix in the above order and let stand for twenty-four hours before using. This quantity will tone and fix perfectly fifty-six 4x5 prints, and the only fault connected with the bath is that it will continue to give fine tones long after the gold has become exhausted and as prints so toned are far from permanent the bath has got a bad name. An article giving much information concerning the bath and how best to use it will be found on page 492 of our volume for 1898; the November.

Color Filters.

R. T. HILL.—(1) You do not say for what purpose the color filters are wanted, whether for three-color work or ordinary photography. If the former, Carbutt furnishes them in sets of three made to suit his polychromatic plate and needs no instruction as to what to send; and if for the latter, and you will let him know just the kind of work you mean to do he will supply them of the right shade to suit both the polychromatic and his ordinary orthochromatic plates. We use both and employ filters of two shades of yellow,

one increasing the exposure about four times, the other eight times.

(2) We suspect your trouble arises from the plastigmat being marked with the now obsolete and confusing so-called U. S. numbers instead of the *f/* values. The *f/16* you have been employing with success in the doublet becomes *f/32* with the rear or single element, and requires just four times the exposure. Unless, however, for some particular purpose, there is no need for employing such a small aperture, as the rear lens of our plastigmat gives perfect definition with *f/16*, marked 4 on the doublet; while the greater chance of securing the effect of atmosphere is a real advantage.

Where Dealers are Slow.

W. D. BROWN.—We are surprised that you could not find the Bayer products in Cleveland, as we had supposed there was not a dealer in the country who did not stock them. The selling agents for America is the Farbenfabriken of Elberfeld Company, 40 Stone Street, New York, who will probably supply the varnish and be glad to know that they are not represented in such an important place as Cleveland.

Titles on Negatives. Mounting Prints in Albums.

H. J. P., Wardner, asks: (a) What is the proper way to paste prints in an album so as to prevent the pages from curling? (b) What is a simple way of marking negatives with name of subject so that it will print white on the picture?

Answer.—(a) Paste them at the corners only.

(b) The simplest way is to write the name backwards on the negative, using any opaque liquid (such as Indian ink) for the purpose. If this is done at a corner of the negative where there is a shadow, the title will appear in white letters upon the print. Another way is to write the title on the paper before printing, using Indian ink for this also. The ink will wash off in the after-treatment and leave the title in white lettering.

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SHYLOCK.

**From a Glycerine Print by
Joseph T. Kelley**

THE
AMERICAN AMATEUR PHOTOGRAPHER.

VOL. XV.

OCTOBER, 1904.

NO 10.

Edited by DR. JOHN NICOL and F. C. BEACH.

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PERSONAL.

FOR over eight years, since April, 1896, I have been the responsible editor of THE AMERICAN AMATEUR PHOTOGRAPHER and while I have doubtless made many mistakes, of some of which I am conscious and probably more of which I have no knowledge, I have never had cause to blush for anything that appeared till a few weeks ago.

During the whole of that period I have had three things ever before me, to be helpful within the limit of my ability alike to the beginner and the more experienced photographer; to keep the readers generally abreast of the times, or, in the words of my introductory address when taking over the work, to make the magazine "an epitome of universal progress in photography"; and to give, under careful supervision to all who may be so in-

clined, an opportunity of exploiting in its pages whatever they thought might be of interest or benefit to their co-readers; but ever with a watchful eye that nothing should appear that could in any way give offence. And until the aforesaid "few weeks ago" I think I may fairly claim to have stuck to my colors, during the last three years with increasing difficulty consequent on the greater part of my time being spent away from home and occupied in more or less constant attendance on a seriously sick wife.

During most of that time the publishers kindly undertook part of the work that should have fallen to me, but not until the two last numbers, when I was able to do less than ever, did the mistakes occur that render necessary this personal explanation, when the zeal of one who had done me many

favors overcame his discretion. The first mistake was in connection with the article by Mr. Rood in the August number. It was submitted to me in proof, and was so far from what I knew to be truth that I could consent to its appearance only on condition that it should be prefaced by a special disclaimer. The appearance of the article brought the disclaimer from Mr. Rood that appears in the September number, and on enquiry I was told that the article had been manipulated. I personally wrote to Rood, with a promise that an apology should be sent to him from the publishers or rather from the friend who had made the mistake, and was under the comforting delusion that there the matter ended.

Readers then may judge of my surprise when the September number appeared with not only no apology to the author whose article I had been told had been manipulated, but, instead, a letter of a very different kind, and one that most certainly should not have appeared had I seen it. Nor is that all. Worse if possible is the letter signed by Curtis Bell. As already said, I have always been glad to give all who cared to do so an opportunity of airing their notions, so long as they kept within the bounds that *gentlemen* set for themselves, but one who can descend to abuse, characterizing one at least as good as himself as "an adroit schemer" and suggest ulterior motives for actions of which he does

not approve should have no place in THE AMERICAN AMATEUR PHOTOGRAPHER. Just how a letter, and such a letter, addressed to *The Camera and Dark Room* came to appear in THE AMERICAN AMATEUR PHOTOGRAPHER I do not care to enquire, knowing that it was done for the best, although a serious mistake, as was the "open letter" that followed it; and as from now I mean to let bygones be bygones, assuring the readers that nothing of the kind can ever again occur so long as I occupy the position of responsible editor.

And now, in conclusion, a few words on the position of pictorial photography in America at the present time may not be out of place. Hitherto it has been, to a large extent at least, confined to a few who have borne the heat and burden of the day, and to them all honor is due, although a few of the few have now and then perhaps gone a little over the score. Now others are arising with perhaps the same end in view, but seeking it by a slightly different road, and to them, so far as they are truly honest and free from self-seeking, THE AMERICAN AMATEUR PHOTOGRAPHER says God-speed and will do its best to help them. There is room enough for all shades of opinion and all methods of pictorial expression; and honest effort, whatever may be its success or failure, shall always find encouragement in its pages.

DR. JOHN NICOL.

FIRST "GUM" WORK.

BY HENRY WENZEL, JR.

HAVING been asked to demonstrate gum-bichromate printing during a vacation outing, the following proceeding proved as successful as any other well could be and is set down here as a guide to those who would try "gum" printing—"just to see what it is like."

I demonstrated for a draughtsman who dabbled in photography. He had potassium bichromate at hand, designed for some other than photographic use. He had also a scale and some mucilage. We poured out one-quarter of an ounce of mucilage. We then weighed out twelve grains of the bichromate and dissolved it in one-quarter of an ounce of water and added this to the mucilage. Then we added some lampblack from a tube of water-color paint. It squeezes out in a worm-like fashion and it was easy to measure off one and a half inches, which was thoroughly incorporated in the gum and bichromate mixture by rubbing it against one side with a glass stirring rod. A piece of drawing paper was thumb-tacked on a drawing board and a little of the black mixture we had made poured on the centre of the paper and quickly spread with a plate-dusting brush in one direction and then another until the coating, becoming tacky, we stopped stroking to avoid streaks. The coating was not an even one by any means, but as the

result did not show evidence of poor coating, the unevenness did no harm.

The day was bright and the paper under a thin negative printed for about twenty minutes in the shade. Try the same time and if, after placing the paper face down for five minutes in a tray of water, you cannot, after laying the print face up on an old negative glass, draw your thoroughly wetted plate dusting brush once over the face of the print, downward and across, without ruining it, you will need to print a bit longer next time. You won't see much of the image until you do brush off the superfluous coating unless you allow the print to develop itself mechanically by prolonged soaking, but for a first trial this is not advisable.

If you can get hold of a piece of Brown's linen ledger paper for your first trial do so by all means; the heavier the weight the better, although any weight will do. The writer's first green Print was made on this paper, and, after trying all others, it is still his favorite.

After making your first trial, read up a bit on the process. You will find that the simple directions above given are simply the A B C of this beautiful process. Its chief value lies in the possibility it allows of alteration in drawing, color, texture and tone, and of this we have said nothing.

THE OLD AND THE NEW.

BY DR. JOHN NICOL.

IT is sometimes profitable to contrast the old times with the new. By "old" I am thinking at the moment of a Saturday in 1866 when a few of the members of the Edinburgh Photographic Society went on a photographic trip to Arniston, and where I exposed and developed nine of the twelve plates carried (prints of a few of those are before me now), and, "although I say it, who should not say it," I have seen none technically better in modern times.

But at what a cost! The method was wet collodion, and the plates, 11 x 9, with all the impedimenta that the combination implies, that "all" being in bulk and weight such as to deter all but the most enthusiastic. A "Smart's" tent that when packed for transportation was as large as two well filled Gladstone bags and weighing not far short of 50 pounds, but when erected enabling one to stand erect and giving table-room of 3 x 2½ ft., light proof and thoroughly ventilated; one box with 12 cleaned and albumenized plates ready for the collodion, and another containing, each in its own compartment, a water-tight bath with half a gallon of the solution; three 20-oz., three 10-oz. and half a dozen smaller bottles, all full to the corks, glass stoppers not being to be trusted; folding developing tray and developing glasses; rubber water tank; pneumatic plateholder; dusting brush, etc.,

etc., etc., weighing altogether probably not less than 150 pounds. And, lastly, the heavy brass-bound camera of the so-called Kinnear type, but, as explained in our last number, should rather be called the Thompson, and the tripod heavy and strong in proportion.

A cab generally took the outfit to the railroad station, and means had to be found for transporting it from our terminus on the day in question. An adjacent farmer had kindly agreed to be waiting for the party and taking it to the previously selected location, a matter of considerable importance, as at least two things were essential; sufficient work for the day within a reasonable distance of the tent, that being such as to admit of going to and fro and exposing before the moisture on the surface of the plate began to crystallize; and not too far from a water supply.

On reaching the ground the work of the day began by the erection of the tent, a wonderful arrangement of fish-ingrod-like, jointed sticks forming when up a most rigid and roomy dark room; filling and suspending the water tank, and getting everything in place: followed by the selection of the subjects, points of view, and time when the light would be just right of as many exposures as we intended to make or the locality afforded.

Then, and not till then, did the real

negative making commence, the *modus operandi* being somewhat as follows: The plate was coated with collodion by pouring on and off, an operation requiring considerable practice; sensitized by dipping in the bath—a solution of silver nitrate as full of whims as a capricious woman; a rapid

ing the dark room, one writer claiming it as a “discovery” that a negative could be fixed in diffused light, but at the time of which I write it was no uncommon thing to see outside the tent and exposed to sunlight a number of unfixed negatives, well washed after “redevelopment” or intensifica-

THE TWO PRIARS.

J. Craig Annan

walk to and from the selected viewpoint with exposure of several seconds between; and development. Some discussion has recently taken place as to the necessity for fixing before leav-

tion, their authors believing that thereby they gained density. Later on, many were in the habit of fixing at home, coating the negatives with some hygroscopic solution such as honey in

water to keep the collodion sufficiently porous, but always fixing in day or white light.

And the negatives were well worth the trouble. They were good to look at, and on "ammonia-nitrate" plain paper, and even its successor, albumen, gave beautiful prints. Technique was more an object then than now, and the amateur generally secured it to his heart's content. Gradation steep and delicate; "juicy" was the expression, and, varnishing being a necessity, they could bear any amount of handling and got it. The fact that it is not always the best looking negative that gives the best print seemed better understood then than now, and they knew also how to make them do both; and when they met to compare notes, it was not the prints but the negatives that were in evidence.

A day's photography in those good old times was a day of hard work, but we did not grudge it, as the reward was great. Few cared for sizes less than $8\frac{1}{2} \times 6\frac{1}{2}$ and 12×10 was more generally employed; and, although most of the work might be classed as "record" rather than pictorial, and was still farther from some of the modern salonesque, it was good to look at, and would still be preferred by a large majority of even the educated and cultured.

Such was the old method, and while none who experienced its training regret having gone through it, they will gladly welcome the new, as by it results equal in every respect, and better in some respects may be obtained with less than a tithe of the labor.

Briefly, the "new" or modern method is the production of small negatives and the enlarging therefrom to the desired size, although in this I mean to treat only of the first part, the small negatives, or rather of the apparatus by which they are produced. And in a word, the load to take to the field, the trouble or work when there, the ease and certainty in fact with which a picture, say, 12×10 or larger may be made ready for home decoration, the exhibition, or even the salon, is as the 2 pounds 10 ounces of the new compared with the 250 pounds of the old.

Two pounds ten ounces is the weight of the latest and, according to my experience, the best of the FOLDING POCKET KODAKS, the 3A, which, from its folded state, can be made ready for action in a few seconds, and has every appliance necessary for high class work; everything apparently to be found in most of the higher classed cameras, and some things not to be found in any. The lens, a rapid symmetrical, covers the $3\frac{1}{4} \times 5\frac{1}{2}$ film perfectly and with the automatic "ever-set" shutter with "Time," bulb and speeds from 1 to 1-100 of a second, leaves nothing to be desired. It has a rising and falling front in both the vertical and horizontal positions, a brilliant reversible finder with hood and circular level, and, quite as important as the most useful, bushes for the tripod screw in both positions.

The most interesting novelty perhaps is the automatic locking device, a method of so setting a sliding bar in relation to an engraved plate, that for

THE LAST HOUR.

Jon. T. Keiley

"THE SONG OF THE SHIRT."

Wm. H. Zerbe, Jr.

focussing at any of the given distances from ten to a hundred feet it is only necessary to pull out the front as far as it will come, which is indicated by a click, and it is firmly locked; and, should there be any doubt as to its correctness, as from its simplicity there well may, there is also the usual focussing scale and pointer, a glance at which will always set such doubts at rest.

And the workmanship. Well it is a thing of beauty, the mere handling of which gives pleasure and inspiration, and although apparently complicated, each part and movement is simplicity itself, and so accurately fitted and smooth in working that I can hardly suppose its getting out of order.

The 3A. F. P. K. in combination with the developing machine—the surprising and unexpected success of which I have already written; and the

orthochromatic non-curling film is an ideal outfit for the production of small negatives for enlargement; for lantern slides by contact; or for the ever-popular picture post cards; and with the addition of a suitable color screen and probably an exposure meter that is also an actinometer, may be made to give them of the highest possible quality.

In saying this I speak of what I know, but I also know that a word of warning may not be out of place. Automatic as is much connected with the working of this ideal outfit, there is a keynote that is not so, and on which, more than on anything else, success depends, EXPOSURE. While there are conditions and subjects that make successful snapping possible, they are exceptional; and he who would aim at a high degree of success will more frequently than not reach it only through the tripod.

GUM BICHROMATIC PRINTING.

(A Condensed Account of the Demonstration.)

BY J. C. S. MUMMERY.

(Extracted from the Transactions of the Royal Photographic Society of Great Britain.)

THE gum bichromate process is the most flexible of printing methods. One may exercise greater personal control with it than with any other method of printing, and it has the additional charm that the whole process may, one might almost say must, be carried out from beginning to end by the worker. Any color

may be employed, the prints are permanent, any intensity of deposit may readily be obtained, and the values—the stumbling block of photography—may be corrected or further violated according to the knowledge of the worker. It is the process *par excellence* for those who work for the joy of the work and for those who strive

LEONE

Jos. T. Kelley.

to impart something of their own feeling and sentiment to their photographs.

The process rests upon the action of light upon the bichromates in contact with a colloid substance. It was originated by Mr. Pouncy of Dorchester and, as Pouncy's Carbon process, was published in *Photographic Notes* in 1858. Pouncy's experiments were possibly based upon the previous work of Fox Talbot, Poitevin and others who had endeavored to produce a chromic process with gelatine as the colloid, and it is probable that the adoption by Pouncy of the less refractory gum assisted him to obtain his results.

Pouncy produced some very fair specimens which were hardly distinguishable from the silver prints of the period, but, judging from the correspondence in the journals of the time, many who tried the process could get no result at all, and some went so far as to say that Pouncy produced his prints by means which he had not disclosed. The process languished, and was pushed aside by the introduction of Mr. Swan's process of carbon printing, which gave a certain and ready method of rendering the exact densities of negatives and could be used commercially. The gum process was unearthed later, and the Artigue paper, which appears to be very similar to gum, was invented in 1889. Mr. Rouillé Ladevèze and others exhibited gum-prints in 1894 and since then it has come into increasing use. The introduction of multiple printing has been of much advantage to the pro-

cess, giving a depth and transparency hardly otherwise obtainable.

The special materials and apparatus required are suitable paper, gum arabic, bichromate of potash, pigment, brushes, muller and slab, palette knife and actinometer. Almost any kind of paper will be found workable. Mr. Mummery prefers a machine-made drawing paper, manufactured by the O. W. Company of Great Russell street; it is a hard sized paper which works satisfactorily with the formula given below. Whatman's drawing paper, various cartridge papers—Michallet, Ingres, Allongé—Autotype single transfer and many others work equally well—but for multiple printing a good hard sized paper is desirable if the whites are to be retained. As a rule a soft paper requires a greater proportion of gum, and with a very soft paper it may be necessary to size with gelatine.

Ordinary gum arabic in tears, not necessarily of the best quality, but free from the insoluble gums used as adulterants, should be used. The solution is prepared by placing 4 oz. of gum in a piece of linen, tying it up into a bag and suspending it in 12 oz. of cold water in a wide-mouthed bottle. The gum will dissolve in the course of two or three days, and will last a long time. It will become strongly acid, but that is not a matter of much moment; if neutralized with ammonia it will work more freely and give a very fine image, but in multiple printing it seems to have a tendency to reversal and in addition is very much slower in printing. If fungi form upon the

stock solution of gum, it is only necessary to filter the solution. Albumen as a substitute for the gum has been tried, but Mr. Mummery has no personal experience of this modification. The consistency of the gum is an important point, the thinness of the coat depending largely upon this. The bichromate of potash should be in saturated solution.

The pigment should be that obtained from an artist's colorman as levigated powder color, as this form can be measured better than the moist color in tubes. Lamp and ivory black, red ochre, burnt sienna, the browns and many other colors are suitable, but sepia and white do not work satisfactorily.

The brushes required are an ordinary camel or bear hair for coating, and a hog hair softener.

A piece of ground glass and a muller are necessary for properly mixing the gum and pigment, as well as a knife of some sort.

An actinometer such as Sawyer's is useful for printing.

A board whereon to coat the paper, a sheet of glass or metal to develop upon, and muslin for filtering, are also required.

The necessity for carefully working by measure cannot be emphasized too strongly; *some* gum, *some* bichromate and pigment *to taste* is an excellent formula for those who hope to fluke a result, but to work the process satisfactorily it is necessary to know what one requires, and to be able to obtain the result with reasonable certainty. The following formula is a kind of

standard upon which variations can be made for particular cases:

Ivory black	40 grains
Burnt sienna	8 "
Gum (1-3)	1 oz.
Bichromate of potash (saturated solution)	1 "

This will give a dark warm brown and the proportion of pigment is suitable for double or triple coating. If only one coating be required, the pigment should be increased to 45-50 grains of black and 9-10 grains of burnt sienna. Mr. Mummery does not advocate a large number of coatings; he gets all he requires in two or three printings. A pigment of a light tint must be used in greater quantity to obtain proper density and a slight increase of the proportion of the gum is desirable. Pouncy, in his original formula, specified 60 grains of lamp black, but this is rather excessive, as lamp black has much greater covering power than ivory black.

Black mixed with brown gives the color most easily worked, and one with which the beginner will get the best results. With some of the other colors there is apt to be difficulty, because of the different exposures they require.

Mr. Mummery then ground the pigment and gum together with the muller and slab. A pestle and mortar are not adapted for this process, but if a spatula or palette knife be used, the operation takes two or three minutes. The fineness of the result largely depends upon the grinding to which therefore special attention should be given. He then added the bichromate

and stirred the mass, afterwards filtering it through two thicknesses of muslin. For single printing one thickness only should be used.

When well mixed a coating on a saucer should appear quite smooth. The sheet of paper to be coated is laid upon a newspaper without creases, and pinned to the board. The pigment should be kept well stirred and too much should not be taken on the brush as the essential point of the process is a thin coating. A thick coating peels off, and requires longer exposure. A hog's hair brush, a few inches wide, is useful for working over the paper after the color has been laid on. This brushing, however, requires to be done very quickly or the coating will become too dry. The brush should not be allowed to "drag" along the paper. If the brush does not pass over smoothly the coating is probably too thick. These details, however, can only be learned by actual experience with the particular color employed. In the ordinary way, black requires longer exposure than any other color, and if the coating be at all thick the exposure will have to be prolonged.

The coated paper should lie flat for about thirty minutes to harden and should then be desiccated on the rack over a kitchener or in a cool oven. It is advisable to lay the paper upon a sheet or two of newspaper, so that the bars of the rack do not mark the coated paper. The coated paper is laid flat to dry, because if hung up the sheets will stretch considerably.

Paper coated in this manner will remain workable for some time, even

six months if kept perfectly dry, but it is better to use it within two or three weeks. It is very sensitive to moisture and must be kept in a calcium tube. The coated paper is not sensitive to light until dry; it should be slightly glossy upon the surface; and an unexposed piece should lose the whole of its coating if soaked in water, a property which is a clear guide as to the condition of the paper at any time. Another method of preparing the paper, introduced by Mr. Packham, is that in which the paper is saturated with bichromate and dried and afterwards coated with pigment and gum, with water added in place of the bichromate, but no particular advantage attaches to the method.

When multiple coating is resorted to, precaution must be taken to adjust the paper and negative so that they may be replaced for the second and following exposures in exact register. An effective printing frame for multiple printing may be contrived with a drawing board as the base, two fillets of wood being screwed at right angles to one another along the edges of the board. The paper is laid upon the board; two strips of cardboard are placed close up to the fillets, the whole being kept in position by means of clamps. The negative is laid upon the paper, and on this a piece of thick plate glass.

The process is best suited for a thin well-exposed negative with plenty of detail. Good graduations cannot be obtained from a negative suitable for carbon or platinum printing. Paper negatives may be used in the process,

but the exposure with them will require to be somewhat prolonged.

Paper prepared as described is quicker than P. O. P. and will be sufficiently exposed when a piece of solio paper shows the depth required in a finished print; such an exposure will be correct for development with a spray, but for prints to be allowed to develop mechanically a much shorter exposure is sufficient.

The chief charm of the print is a certain slight running of the image after development and during drying. Most methods of development by friction, such as brushes, cotton wool, etc., have a tendency to remove too much of the softened gum, and to leave the print hard, especially if over-printed. Mr. Mummery contrives to have some resistance left in the material worked upon, and does not try to get the very last out of it; when development is carried on in this way the color will run but only a very little. The exposure will be from 2 to 9 tints on the actinometer, according to the color and density of the negative; a piece of papier mineral at the back of the negative will increase exposure 8 or 9 tints. In a properly exposed print the image will be clearly visible by transmitted light; it is necessary to keep the print absolutely dry if development be deferred, or it will rapidly become insoluble and heavy, and for the same reason a print should not be left longer than necessary in the printing frame. The "continuating action of light" experienced in the carbon process occurs also in this process after the paper has been exposed,

and development should be carried out as soon after the printing as possible.

A variety of methods are available for the development or washing up of the image. The print may lie face downwards in water to develop itself; the image may be washed up under a spray of water, or by laving with water, and an excellent method is with sawdust soup as used in the Artigue process; this is very useful for high surfaced papers, or, again, a soft brush or pledget of cotton wool may be used either under or above water. The ordinary spray as used for fixing drawings is perhaps the most convenient method, as it gives either a delicate or powerful washing at will, according to the distance of the nozzle from the print and the pressure of the air. It may be used either with the bellows with which nature has provided us, which attain a pressure of nearly 4 lbs. to the inch, or with one of Fletcher's bellows giving a pressure of about 2 lbs. per inch. Although the latter requires less effort to work, it is not so delicate or so much under control as the breath. If the high lights come away from the paper in development, it is probable that too much gum has been used in the coating.

The double coating process enables one to intensify all the darker tones, or such as may be desired, and the object of multiple coating and exposure is to get finer graduations in the finished print. It is not necessary that a second or third printing should be of the same duration as the first. The first printing should be longest, the

second rather less, and, if a third printing be necessary, it should be still less than the second.

In order to work upon the print with a brush it is desirable that the print should be first dried or nearly so, although a better plan is to entirely dry the print in the dark and wet it again, when the brush may be used with safety. For spotting, the best color to employ is pigment like that used in coating the paper. Details, such as the clouds, worked in at the first coating, will not be obliterated by a second coating of color. With regard to fixing the print in the ordinary way this is not necessary. Fixing is simply the removal of the bichromate, and the print is quite permanent when once exposed to light for a time. When using color such as ivory black and burnt sienna it is not necessary to remove the bichromate of potash, but if it be desired to take out the

bichromate, this can be done with a 5 per cent. solution of alum or a 5 per cent. solution of bisulphate of soda. Some colors necessitate the removal of the bichromate after development. The prints should not be laid flat to dry or the color may run into the whites. The best way is to lay the print on a support in a slanting position, keeping the darker portions at the bottom. Alcohol flowed over the print may hasten the drying, but gum prints when wet are so delicate that great care is necessary, or the pigment will leave the paper in a sort of wave. The prints may be varnished either with gum solution or ordinary paper varnish, but before varnishing it is necessary to size the paper with ordinary size of isinglass. Aqueous mountants, such as starch paste, may be used for gum bichromate prints, but Higgin's photographic mountant is a very convenient article for the purpose.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

SPEAKING of the state of the photographic labor market and the less than "living wage" being made by some of its employers, Free Lance in *The British Journal of Photography*, in the following, gets pretty close to the cause: "But can it be wondered at? The introduction of the dry plate sounded the death-knell of the average professional, for any one with a month or two's prac-

tice can now take a decent photograph, while even a brick-layer would have to serve a long apprenticeship before becoming expert enough to earn a wage. Certainly his wage would surpass that of a photographer's assistant; but that is a detail. The only consolation to be offered is that there are assistants and assistants, and no pity can be felt for a man who embarks in a calling requiring no more experi-

ence than a rag-picker, and whines when he gets rag-pickers' wages. For there are master rag-pickers who make big fortunes—at least, when they are called chiffonniers."

* * *

The editors have been taken to task for their oft-repeated truism that "one sees in a picture just what they bring to it," but it is easy to see that such a statement must be unintelligible to those who have nothing to bring. Whistler, who knew a thing or two about pictures, seems to have pretty much the same idea. Here is what he says: "As to what one sees in a picture depends very much upon who looks at it. To some it may express all that is intended; to others nothing," and of such of course are the fault finders. But while all this is true one must not run away with the idea that they have no pleasure in graphic or other art, as probably they derive as much pleasure from a really good "record of fact" as others do from more pictorial productions, as much pleasure I mean as they are capable of receiving. A pint bottle filled is as full as a quart bottle in the same condition, but it does not hold so much.

* * *

Dr. Grun has been at it again, and this time as amusingly as before. The old adage about a certain class of people rushing in where even a much higher class fears to tread, while not quite applicable to the Doctor, yet gives a hint of the conditions. He butts in against Abney, Ives and

others who know almost all that is to be known of a subject about which he is evidently very ignorant.

Color and color photography is the theme of his letter in *Photography*, written to show that a few crude experiments have convinced him that the "yellow screen" is a useless addition to the photographer's kit, even with orthochromatic plates, and that the employment of the spectroscope in adjusting the color screens for three-color work is a delusion and a snare. But bad as that is, there is worse to come. He revives and claims to have proved the truth of the old, old delusion that the placing of a blue screen in front of the lens will materially shorten the exposure. It is very evident that the more the doctor writes on scientific matters the less will be the credit that he gets for knowledge.

* * *

The doubting ones who prophesied that the appointment of the American "Links" as the selecting committee of American exhibits to the London Salon would deter American pictorialists from exhibiting have by this time discovered "the folly of prophesying till you know." Altogether some 400 pictures were sent in, and as the standard was unusually high, only about ninety were passed, the work of thirty-three photographers; but even that will be nearly 25 per cent. of the whole of many high-class exhibitions; a very good showing I think.

* * *

Who shall say that photography is losing its popularity when, as is liter-

ally the case, the camera is to be seen equally in the royal carriage and the dust cart?

In a recent batch of "words" I recorded the fact that the British Queen while traveling in Ireland noticed that she was being snapped at by some amateur photographers, when instead of trying to foil them as some of *less note* are apt to do, she laughingly turned her camera on them. Now, according to the *The Amateur Photographer*, or rather the *Liverpool Mercury*, the driver of one of the municipal dust carts keeps his camera, ready for use, beneath the box-seat of his vehicle.

* * *

Our British brethren must be hard up for packing when they, as several of them have, give currency to such nonsense as the following which I clip from one of them, copied by it from the London *Daily Mail* and wired to it by its New York correspondent: "Much public interest centers in a man named Abbott Parker, who was struck in the back by lightning on Friday afternoon in Morristown, N. J. Upon being removed to the Catholic Hospital, Parker was placed on a cot over which hung a large crucifix. While the patient's back was being bathed with alcohol and water the physicians and nuns were astonished to see a picture of the crucifixion on the flesh, whereas a few minutes before no picture was there. The nuns believed that it was a miracle, and the doctors were mystified, as they declared that the picture was not the result of tattooing. An expert tattooer, after an

examination, also decided that the picture was not tattooed. A theory which seems generally accepted is that Parker's skin had become sensitized by the effect of the lightning, and acted as a photographic plate for the crucifix hanging over his cot. The patient, who is recovering, says that he was never tattooed.

* * *

It requires very little study of the illustrations in the photographic magazines catering more directly to professional photographers to show how little of art they get into their portraits, although that is to some extent discounted by the fact that they work to please their sitters, but one would have supposed that their technique—so easily obtained—would be faultless. Yet hear what F. Dundas Todd says, and he ought to know, speaking of one who had sent prints to one of the *Photo-Beacon* competitions. He says: "Like the majority of professional photographers whose work I see, he is unable to produce a really good negative, with the necessary result that his prints are poor."

* * *

The professional photographer may forgive friend Todd in consideration of the really rousing influence he has had on some of them, but some of his editorial brethren hardly let him down so easily. The editor of *The Amateur Photographer*, in reproducing part of his article on "Photography at the St. Louis Exposition," in his June number, winds up with:

"Here follow some insinuations against the Photo-Secession and Mr. Stieglitz which are utterly unworthy any honest critic, and all but impossible of production in print in a country where blackmail and slander are

actionable, and where it is not polite to call your antagonist—even by implication—a liar. *The worst type of American is so often that which is made and not born.*" The italics are mine.

NOTES

RULED SCREENS for process work are costly, especially when of considerable size, but if the method suggested by Dr. Kuno and Herr Albin Fichte, in *Photographische Industrie*, should prove practical, they may be brought within the reach of every one. They propose to employ the ruled glass plate as a mould, filling up the lines, which are really grooves, with a suitable plastic pigment, and then coating the plate with a liquid that shall dry as a film and when stripped off bring the pigment in the form of fine opaque lines with it. So far as we can see there does not seem to be any serious difficulty in the way. Will some of our experimenters take the hint and give the method a trial? The liquid which yields the celluloid film should answer the purpose.

CRACKS IN NEGATIVES, says a writer in *Der Amateur Photograph*, in which the film has not been damaged, need not be repaired by floating off the film, but can be mended as follows: Over the glass side of the negative a mixture of one part of turpentine and one part of Canada balsam is poured so that it will penetrate into the crack. The surplus is removed by a rag

dipped in benzine. In copying, the crack, it is said, will be absolutely invisible. The difficulty of handling such a negative may be overcome by binding it to another plate in lantern slide fashion.

YELLOW GLASS. According to the *Globe*, M. Charles Henry, who "in 1899 introduced a yellow glass, which he called anactinochrine, to replace red glass in photographic laboratories, has now made an improved yellow screen of the kind which is more anactinic or exclusive of the actinic rays, and at the same time more illuminative, that is to say, permits more visible rays to pass."

COSTLY CINEMATOGRAPH FILMS. Mr. Charles Urban, of the Bioscope Company, in an article in the *Weekly Dispatch*, gives some interesting information regarding the trouble and cost involved in the production of some of the negatives from which the Bioscope films are printed. The few films of the Russian war had at the time of writing already cost £1,200= \$6,000, and the attempt to secure some of the Japanese army at work was costing over £150=\$750 per month.

Concerning the reproduction of the British coronation he says: "The biggest thing I ever engineered in a single picture was the reproduction of the coronation ceremony of the King and Queen in Westminster Abbey. We had machines both inside and outside the Abbey, and twelve skilled operators were engaged on the pictures. One of our greatest difficulties was the impossibility of employing an absolutely silent machine. The whirr of wheels would have been altogether out of keeping with the solemnity of the scene in the Abbey. Yet the authorities considered it necessary that future generations should be able to see for themselves the moving pictures of that historic scene. There was only one way to accomplish the result—to photograph a rehearsal. So at Montreuil, fourteen miles from Paris, a huge 'property' Westminster Abbey was built up at enormous cost, the whole front being left open to the daylight. The point of sight was chosen to give a view of the High Altar, the entire North Transept, and part of the choir stalls. In constructing the scene, real and substantial galleries were constructed for the peeresses, and above them the members of the House of Commons, with their wives. One of the most startling effects of the display was at the moment when the duchesses and countesses assumed their coronets. The representative of the King had to be dressed in field-marshal's uniform, complete to the last order, and uniforms, robes, ribands, crowns, coronets and jewels had all to be supplied, from data verified to the

day of the mimic coronation. The cost of the dresses alone was £1,200. Although the picture is necessarily in black and white, regard was paid to the differences of color, the King being arrayed first in crimson robes, and then clothed with the imperial mantle. Cloth of gold was specially obtained, and nothing was left to the imagination which came within 'principal focus.' All the theatres of Paris were drawn upon for the actors and actresses, and rehearsals were carried out with the exactitude of the Theatre Francais or the *mise-en-scene* of the Opera, in anticipation of a gala night. One hundred and fifty artists travelled by special train to Montreuil daily, and so perfect were they in their parts that I suddenly determined to 'take' the last rehearsal on my film. A trial bit of it was developed in the dark room on the spot, and it was found so satisfactory that the rest was brought to London, and was put in hand the same night, with the result that every picture was found perfect, each negative beautifully graded. The street scenes were highly successful, and everything was shown the same night in London!"

SEEING PICTURES.—Mr. Charles E. Barr, in the catalogue of a recent exhibition, gives the following qualities that should be looked for as being helpful to those not well acquainted with art, and they should be equally helpful to those trying to make pictures.

"What is it that makes a picture? In general, we may say the important

factors are embodied in the motto of this club: (a) 'Unity, (b) Simplicity, (c) Breadth.'

"(a) All things in a picture should pull together—Unity. The whole should balance either in mass or interest. Balance does not imply masses equally disposed about a centre—a small mass far away may pull as much as a large one near at hand. Variety, too, must exist, for monotony walks hand in hand with failure, and artistic feeling resents the bounds of formal arrangement.

"(b) Every picture has some chief object, and to this all things else pay tribute. A picture should arrest the fleeting glance, lead it to the centre of interest, tell its story, and awaken in the mind a chain of recollection or a play of fancy that imbues it with an interest, fictitious perhaps, but fully

designed by its author, the artist. Hence, Simplicity.

"(c) Breadth, by suppressing irrelevant detail, concentrates attention and adds force to the picture idea.

"These factors contribute to make the 'Composition' of the picture, and the artist is known not only in choice of subject, but he reveals himself in his way of handling it.

"Add, then, to composition, Unity, Simplicity, Breadth, and to these tonality, by which changing effect of atmosphere and subtle play of color may be suggested even in monochrome, conjoin the whole with skilful technique which is skilful just inasmuch as it succeeds in concealing itself, suffuse the whole with the fire of individual artistic feeling, and the product, whether by brush or lens, may fairly be esteemed a work of art."

COLOR SCREENS. A MAKESHIFT—AND A SUGGESTION.

BY JOHN GOULDING.

THE object was to secure a few negatives presenting a certain group of buildings in their most attractive aspect. No good result could possibly be obtained from any near standpoint, owing to the configuration of the ground; but the views afforded from rising ground a mile distant were pleasing, and indeed flattering—clearly a case where a telephoto lens could be used to advantage, and where a yellow screen and isochromatic plates would help to regis-

ter the gradations in tint of the woods that, although really at some distance, now appeared as the background to the buildings.

The last purchased anastigmat, a Voigtlander "Heliar," with a Dallmeyer negative attachment, was selected for the work, and striking testimony to the excellence of both lenses was found in the fact that critically fine definition was given with the positive at its full aperture, viz., F/4.5.

But the extreme delicacy of the

combination became evident when a screen was added. Two different screens of yellow glass, purchased as "optically worked," at prices to correspond, were tried; these had been used without any fault being noticed in ordinary work, but when placed in front of the telephoto combination the beautiful definition was quite destroyed. Placed behind the lens the result was not so bad, but not really satisfactory, and the work was therefore adjourned to another day so that a better screen could be obtained or some other expedient devised.

A makeshift was eventually resorted to; sheets of the very thin gelatine used by confectioners and bon-bon makers, a bright greenish-yellow in color, were taken and cut in pieces a little larger than half-plate size; a piece was inserted in front of each plate in the dark slides, the overlapping portions having been neatly folded over and fixed with a touch of adhesive to the back of the plate. In this way each plate carried its own screen in the position likely to cause least optical disturbance. The exposures were made, the colored gelatine torn away from each plate before development, and the results were quite good—there was no perceptible loss in definition.

There is much to be said for a system of screening on these lines. The position secured to the screen, *i. e.*, immediately in front of the sensitive surface, is theoretically correct. As regards material it is admitted that

screens cannot be made from colored glass to give a *pure* tint; the best screens at present available are made from two pieces of *clear* glass with a colored film cemented between them; this involves the working of *four* surfaces with the same accuracy as a lens, and even then the coloring matter is always liable to fade.

In the makeshift referred to it must be borne in mind that such colored gelatine had to be taken as could be readily found; it certainly appeared to be about the right tint, judged by the eye, but it had not been intended in any way for the use to which it was put. If there were any demand for this thin gelatine for photographic purposes, it could easily be had in any particular shade of any particular dye or dyes, and a maker of isochromatic plates could supply it to *exactly* suit his make of plates, which would be much better than the haphazard relationship which usually exists at present between plate and screen.

Excellent isochromatic plates are sold "ready backed." Which maker will be the first to offer plates that are also "ready screened" by a suitable medium? Further, an arrangement of this kind could be adopted to great advantage for isochromatic film in such a device as the Premo Film Park, where, in addition to acting as the color screen, the gelatine sheet would prevent contact between the sensitive surface and the paper support of the next film, and would remove the possibilities of scratches in working the pack.—*The Amateur Photographer.*

THE SO-CALLED STEADMAN SYSTEM OF ESTIMATING EXPOSURE.

The many queries that have come to us regarding the so-called "Steadman system of estimating exposures" will be best or most conveniently answered by the following brief article, which will, if possible, include them all. And we may say at once that the apparent interest which it has aroused is both surprising and a little humiliating; surprising because when stripped of Mr. Steadman's redundancy there is nothing in it that has not been done and better done before, and humiliating because we and others having again and again published the method in the better form, it clearly shows that much of our labor has been in vain.

We are ready to believe that the system is original with Mr. Steadman, but it would not be difficult to show that in every step in it he had been forestalled by a decade and in some of them by half a dozen decades. It was early and easily understood that a system that included an actinometer must be better than any set of tables depending on the position of the sun for their information, but without taking into account the natural variation of the light; but not until shown by Abney some time in the eighties was it realized that an emulsion of silver chloride was not the best test for the action of light on one of silver bromide. The "First darkening" was also proposed long before Steadman appeared on the stage, but being weighed and found wanting, and was abandoned for comparative tinting. Who, for instance,

could compute with anything like satisfactory results from the fraction of a second required to "first darken" solio or any of the other printing out papers, and who cares to carry in their heads a series of diaphragm substitutions when he has, by practically the same system, but wonderfully improved, only to give a partial turn to a disc of glass to get all the information needed for a correct exposure?

Wynne and Watkins, and perhaps others of whom we do not know, have made this possible, and to them photographers are more indebted than they seem to think. We have before us now the well-known Wynne's infallible exposure meter with a test paper at least a year old. Exposed to the light that will fall on the subject to be photographed, in this case to the shadow of my own body, the year-old test paper exactly matched the standard tint in eight seconds. Eight seconds is therefore the "actinic time," which means that the f/x value given to any particular plate is the size of diaphragm with which that plate will be properly exposed with that light and in that time. What follows is plain sailing; the exposure for one diaphragm being known the exposure for all other sizes are simply a matter of calculation. And in the Wynne, the Watkins and others, if others there be, that calculation is ready to hand. It is only necessary to turn the disc of glass on which the f values are inscribed till the plate speed (in the

present case, Eastman's "Kodoid" f/90) to know the time for all others from f/4 to f/256, ranging from 1-64 of a second to 64 minutes. Is the so-called Steadman system as simple and as likely to result in such an approximation to the correct as this? We trow not; and while it may be of some help in the portrait studio for which we rather think he particularly intended it, the Wynne or the Watkins are each as much better and simpler as knowledge is to ignorance.

But while what may be called normal exposure may be thus easily obtained, it is not necessary to give under all conditions the indicated exposure. We, for example, like longish exposures and therefore generally add some 20 per cent. to it. Subjects also vary to an extent that make modification necessary, and to aid in that the

cases of the Wynne's meter have engraved on their backs a list of seven such subjects from "Sea and Sky" requiring only 1/10 to "dark objects near the camera" with twice the normal.

Some time ago while looking for answers to the questions mentioned at the beginning of this article, we exposed two spools of six exposures each in our 3A folding pocket kodak, the subjects varying from bathers on the beach and in the surf in the brightest of bright sunlight to the not well lighted interior of the life saving station; all timed by the Wynne's meter, and developed in the kodak developing machine, and a better set of negatives so far as the technique is concerned no one could desire; and—this was the main object of the experiment; *they were all equally good.*

INTENSIFICATION WITH IODIDE OF MERCURY.

Many years ago a method of intensifying by means of a solution of mercuric iodide in "hypo" was introduced by B. J. Edwards, and for a time was much used, but was gradually given up because the dark colored deposit formed was unstable and gradually changed to yellow. Messieurs Lumiere have altered this method, substituting a strong solution of sodium sulphite for the "hypo" solution as a solvent for the mercuric iodide, and following the action of this solution by treating the negative with a developer. The method has the great advantages of giving a high degree of intensification and of being applicable to nega-

tives that have only been washed for a short time after fixing, since "hypo" has no effect on the solution. For these reasons it has come to be somewhat largely used in process work on gelatinobromide plates. The intensifier contains:

Mercuric iodide	1 part
Sodium sulphite crystals.....	20 parts
Water	100 parts

Negatives are immersed in it until the required degree of intensification is obtained, the deposit being dark olive green in color. They are then well washed and treated with any strong developer, such as metol, with sodium carbonate or potassium carbonate as the alkali.

THE KODAK DEVELOPING MACHINE.

The John Scott Premium and Medal of the Franklin Institute Awarded to its Inventor, Arthur J. McCurdy.

The Franklin Institute, acting through its Committee on Science and the Arts, investigating the invention of Arthur W. McCurdy, reports as follows:

The awkward tendency of photographic roll films to curl up in the process of development, the consequent handling required and undue exposure to the dark room light, have led the manufacturers of this product, the Eastman Kodak Company, of Rochester, N. Y., to place on the market a device with which development can be carried on without the aid of a dark room, and without any handling of the film whatever until it is developed and fixed.

The apparatus is adapted to treat what is known as "day-light film," that is, film covered in the back, its full length, with a strip of black paper before reeling to enable it to be inserted in the camera and removed from it in daylight without injury.

The most obvious method of reducing the amount of handling required to develop each separate picture is to develop the entire film at one operation—a practice of no very recent date among professional operators. A simple apparatus for doing this would consist of a cylindrical roller placed at the bottom of the developer recipient under which the film, face outward, could be drawn back and forth. Enlarge the roller until its circumference is equal in length to the film to be developed, provide means for attaching it thereto, at the same time keeping it tightly drawn against the surface, add a crank for rotating the cylinder and a light-tight cover, and we have the kodak developing machine in its most elementary form.

A cylinder large enough to hold a film of the usual length would be inconveniently large, and in the perfected machines it is replaced by a flexible strip of corrugated rubber along the full length of each edge. When this is rolled up it forms a spiral with a

space between the adjacent coils equal to the thickness of the rubber edging. If the film is rolled along with it, face outward, it occupies the same relative position with respect to the spiral surface as it did in the previous case with respect to the cylinder. This may be mounted on a mandrel and submerged in the developer which finds its way through the corrugated edging between the convolutions of the spiral to the film surface. The complete apparatus is manufactured under letters patent No. 647,900, granted to Arthur W. McCurdy, April 17, 1900.

It consists of an oblong metallic, fluid-tight box, divided into two compartments D and E, through which pass mandrels A and B. Compartment D merely carries the celluloid strip or "apron" before use, which is transferred to compartment E along with the film during operation. A clamp H is provided to carry the film spool K.

Placing the spool in the holder H, a short length of the paper backing C is threaded to the spindle B, to which is also attached the end of the apron F. Enough developer is poured into E to half fill it. The box is then covered and the apron F and paper strip C carrying the film are completely wound upon B. With standard developer and at the usual temperature of living rooms these are kept in rotation for about five minutes, when development is complete. The developer is then poured off, and without any rinsing the fixing bath is introduced, and the rotation is continued until the fixing is complete.

Close contact between C and A is secured by frictional resistance applied to the spool K as C unwinds. No provision is made for holding the loose end of C in contact with the apron G, dependence being placed on the adhesive properties of the wet paper, which, being considerably larger than the film, preserves the tension on that part of the paper

carrying the film in much the same manner as a comparatively slight tension on the "slack side" of a belt running over a pulley with a large arc of contact will produce a much greater tension on the tight side.

It may be questioned whether treating exposures made under widely varying conditions in the same developer for the same time would not result in many failures. The manufacturers claim that by using the developer they recommend, pyrogalllic acid, great latitude in exposure is allowable.

Three six-exposure films, exposed in the kodak, were developed according to the printed directions. The subjects are outdoor views, taken, probably, under one condition of lighting. The excellence of the re-

sulting negatives, submitted herewith, demonstrates without doubt the capabilities of the device for normal exposure.

To further test the machine with varying exposures, three indoor exposures of the same subject were made of five, ten and twenty seconds on a film containing snap shot outdoor exposures. The results were perfectly satisfactory and leave little doubt that great latitude in exposure is allowable.

For the excellent performance and certainty of action of the machine, and the ingenuity shown in devising the simple and efficient means leading thereto, the Institute recommends the award of the John Scott premium and medal to the inventor, Arthur J. McCurdy.

OUR PORTFOLIO.

Prints for criticism, only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1813, M. A. YAUCH.—"Touched by the Breath of Winter" is an ambitious title to a worthless photograph. Neither snow nor sky is anything like properly represented by white paper as they are here. The exposure has been much too short and the development far too long; nor is the subject one that, but for the snow, would have been thought worth a plate.

1814, W. LUCKHAUPT.—"To the Pasture," a woman leading a pretty Jersey cow, is a good example of the "record" phase of photography, although we cannot see why you should have placed the horizon so high, giving three-quarters of the space to the uninteresting foreground all in one plane. The trimming of an inch or more from the bottom improves this, and with that added to the sky it would be still better. The clouds, presumably printed in, are too dark and too cottonwooly to be an improvement. Such clouds, even if they were natural, had better be painted out and the resulting white sky toned down. While this is a good "record"

W. Luckhardt
TO THE PASTURE.

it might easily have been made a true picture, and having so well mastered the technique you should turn your attention to the art that may be infused into your photographs.

1815, C. F. THORNTON—"A View in Summer" is black enough to be called a view at midnight, and is simply worthless

tion of the terms. It has none of the essential qualities of a picture, and the negative from which the print has been made has been very much over-exposed, and that over-exposure has not been cared for, as it might easily have been, in the development. We might also call your attention to an objectionable feature in the composition, the two horizontal lines, something like a road or path in the foreground repeated in the distance by what is probably meant for water, but from improper development is simply a line of white. Such repetition would be fatal to true pictorial effect. "Portrait" in our next.

from under exposure. We might have said under development, too, but for the fact that the roof of the building in the distance is as white as paper can be made and the sky nearly so, showing that that operation had been pushed far beyond its limit. Just why you should send such a print is a puzzle, as you must see as well as we that such blackness cannot possibly represent a summer day.

1816, M. H. BELL—"Cut in Vicksburg." We hardly know how to class this print. It is not sufficiently defined for scientific or geological purposes, and has no claim to the pictorial, being as far as possible from picturesque, so that we are constrained to the supposition of some local interest unknown to us. With the information or rather lack of information we have, and regarding it only as a photograph, we cannot see why plate and paper should have been spent on it.

1817, S. A. SMALL—The unnamed print has little or nothing to commend it, neither as to subject nor treatment. It is merely a conglomeration of matter without one object of more importance than another, and with neither light nor shade in the true accepta-

tion of the terms. It has none of the essential qualities of a picture, and the negative from which the print has been made has been very much over-exposed, and that over-exposure has not been cared for, as it might easily have been, in the development. We might also call your attention to an objectionable feature in the composition, the two horizontal lines, something like a road or path in the foreground repeated in the distance by what is probably meant for water, but from improper development is simply a line of white. Such repetition would be fatal to true pictorial effect. "Portrait" in our next.

1818, F. SOLOMON—"Evening" looks more like a print from an insufficiently developed negative, as there is an entire absence of the atmospheric effect of evening, the distant objects being as well defined as those that are nearer, while the series of parallel horizontal lines indicating water look more like the results of drawing a brush charged with white across black paper. A decided improvement would have been the disturbance of the water just before exposure.

EVENING.

F. Solomon

1819, F. F. SORNERGER.—“Preparing Dinner,” a woman sitting on the doorstep and peeling potatoes, with a cat at her feet, is a good print from an equally good negative, and doubtless an excellent likeness. Pose and expression are faultless, while the cat, an excellent likeness, too, is just in the right place, giving the needed support and balance to the figure. This is altogether a fine piece of work, and well worth enlarging.

1820, HARRIS WHITE.—“Boating on the Muskingum” is one of those attempts, rarely successful, to include a large tract of country on a small space, but a little better than the average. A lens of much longer focus was required to do anything like justice to the scene, this being far too much road to far too little river and wooded home-scattered distance.

1821, S. F. CLOWNEY.—“The Approach of Spring” is an excellent example of “record” photography, although we cannot see just where the title comes in, nor is the definition, especially on the left, quite as good as the “record” demands. It has, however, the rare virtue of including only a narrow angle, and with more care to secure the needed at-

mosphere, might have been a fine picture. As it is, however, we like it very much and return to it again and again, each time seeing new beauties in it.

1822, M. D. HABERLEIN.—“Shohola Glen.” If a print is worth mounting it is worth mounting properly, and this is not so, being at such an angle, as, in spite of a determination not to be, to prejudice us against it. To trim it as you suggest would be an improvement, but only because of the apparent false perspective from the employment of a lens of too short focus, the exaggerated foreground so diminishing the distance as to give an unreal appearance. The $7\frac{1}{2}$ -inch lens should not be used on a plate larger than 4×5 , and in this case the definition over that space is satisfactory, although wrought at an aperture much greater than its normal, $f/6$, instead of $f/8$. The light, however, must have been very poor, as, in spite of the large aperture and the two and a half seconds exposure, it has been so much too short that, although development has been pushed till everything in direct light is white, there is an entire absence of the necessary shadow detail. It is a good selection from a satisfactory point of view, but with an apparently false perspective caused by going too close, induced, in its turn, by the use of a lens of too short focus, and under-exposed and over-developed.

1823, W. L. GRADT.—“Woodland Pasture” is a beautiful subject from an excellent viewpoint, and full of poetic feeling. A lovely bit of landscape with a foreground of grass and water, a clump of trees and some cattle at rest under their shade, with one, an alert Jersey, as a watchful sentinel. That is what it easily might have been, but alas! the sky is almost white paper and the water altogether so, while the trees are as black as midnight. Surely those fatal flaws are as visible to you as to us, although you may not know that the cause is a too short exposure, and a too prolonged development. The picture is beautiful, but only so because we can in imagination supply detail to the blackened tree-trunks, and very much

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lower the tones of both sky and water, the latter of which is really lighter than the former from which alone it derives its light. You cannot make a good picture without sufficient exposure, and it does seem a pity that such a fine subject should be rendered almost worthless for want of something so easily given

1824, (Mrs.) D. B. HENDERSON.—"Grace." a portrait of an apparently good humored and graceful lady in a most ungraceful position. So ungraceful and full of angularities that we doubt that if you had tried you could not have made it worse. She is placed in the corner of a room with, by way of background, one part of wall paper and the other of a bookshelf, the former so well defined as to attract and keep the eye from the good natured face. The photography is excellent, even the white dress, that most difficult of subjects, is perfect in its light and shade. But the figure is painfully arranged. She occupies only about one-half of the seat of the chair, the half made by drawing a line from corner to corner, suggestive of a

most unpleasant seat; her right arm is clasped round the back, and her left hand hidden in a fold of the dress, pulling it in in a way far from pictorial. In fact, she is made to take or to suggest a zig zag form that may be natural, but is far from picturesque.

Your photography is good, very good, and you have only to give more attention to posing and making the background less prominent to be an excellent portraitist, the most difficult of all branches of pictorial photography.

1825 CARL KREBS.—"What O'Clock," a child in the midst of a field of seeded dandelions in the act of blowing the winged seeds from one, and thereby seeking an answer to the question indicated by the title, is a charming picture with but one serious fault, the utter lack of the much needed atmosphere in the distance. The little one has assumed a charming and natural position and an equally natural expression, and she is placed just where she should be. As a rule, we are not fond of high sky lines unless for some visible reason, and there is ample excuse for it here, although the little bit of cloudland that we have makes us wish for more. We are not sure, however,

W. L. Graft
WOODLAND PASTURE.

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WHAT O'CLOCK.

Carl Krebs

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A WET NIGHT AT CONEY ISLAND.

A. Levine

that the mounting is the most effective, being in harmony, while we think we should have preferred contrast. The print is a warm brown and the mount, first a narrow strip of a very dark color of the same, and then a broad expanse of a lighter shade, but still considerably darker than the print. Good as the brown mount is, we should like to see the effect of a gray or a green, as we feel, although we do not care to say, that either would be better.

1826, ARTHUR LEVINE.—"A Wet Night in Coney Island" is a photograph of an illuminated tower and its surroundings, and good of its kind, although, in our opinion, the "kind" may be described as one of those dances that are not worth the candle. There is nothing in this that could not be equally well reproduced by any tyro who choose to give sufficient exposure, and, as we know that you can do something very much better, we wonder why you should waste time and material on anything so useless. Please to remember, however, that that is only our opinion, and some may like this sort of thing and to them it will appear a very good piece of work.

1827, B. F. FLORA.—"Lovey Mary" is a portrait, head and shoulders of a semi-nude, or perhaps we ought to say in her night-dress, that misses being good merely from great under exposure. Lighted from a too high source—it was taken in a room with a north window, every portion of the loosely hanging hair not in direct light is as black as paper can be made, and development has been pushed till the face and bosom is as white and textureless as the white night-dress. Under the conditions, with the single plastigmat at about $f/14$ five instead of two seconds might have given you a very different result. Such a "might-have-been," simply because of the craze for short exposures, sometimes makes us more than half inclined to abandon the role of photographic teacher.

And yet, when all is said, this gives us pleasure. We return to the beautiful face again and again, and, as said of 1823, let the

B F Flora
LOVEY MARY.

imagination supply the fatal lack of detail in the hair, and of texture to the face and breast, and enjoy the picture as it might so easily have been.

1828, A. J. REED.—"March" and apparently a rainy day, although a subject of little interest, is a good reproduction of the condition indicated. The subject in fact, but for the effect of atmosphere, was not worth wasting a plate, and the fact that the two most prominent figures with the umbrella are evidently standing to be photographed gives the whole thing away. We admire the effort, but not the execution, and, as already said, there is nothing in the photograph worth the printing but the fine effect of atmosphere.

1829, P. C. WALKER.—"On the Charles" is a beautiful photograph of a beautiful subject with one serious fault, an utter lack of the always essential atmosphere, the most dis-

tant objects being as clear and well defined as those in the immediate foreground. Whether the fault of the use of a too small stop or exposure during an unsuitable light we cannot say, but the fault is so serious as to reduce what might have been a fine picture to a mere record of fact. But it is a fine record and gives ample evidence that the author needs only a little knowledge of the truly pictorial to do work that shall be of a very high class. As it is the three planes are merged into almost one, while the need-

chance of its being mutilated in the mail bags, thrown as they often are from the car to the ground at our wayside station. *Verbum sat sapienti.*

1830, D. H. BROOKINS.—"The Sentinels," a print from a pinhole negative, leaves almost nothing to be desired, the only fault being the placing of the more important tree too near the centre of the composition, and too suggestively dividing it into two equal parts. A small sheet of water in the

MARCH.

ed and so easily obtained atmosphere on the third, especially with such a beautiful sky, would have thrown it back and made it just what it should have been.

A word to you which is meant to many others as well. Why use such large mounts? If you could see how Uncle Sam's postal messengers mutilate them you would not. We do not, as a rule, notice the mounting and can appreciate the beauties of a print on a card not larger than itself as well as one much larger, and there is much less

A. J. Read

foreground, a rolling middle distance, backed by two trees and nothing more, but the simplicity, combined with breadth and boldness, has a most charming effect. If there is a fault, it is a rather too short exposure, as greater detail in both trees and shadows might have been better, or even longer development so as to have obtained a more pronounced contrast. As it is, however, it is a strong picture that we go to again and again, each time liking it better than before.

THE SENTINELS.

Pin Hole Photo by
D. H. Brookins

ON THE CHARLES

T. C. Walker

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

The Camera Club of New York.

The summer season at the club has been quiet in consequence of many members being absent in the country or on vacations. The regular monthly meeting was held on Sept. 13th, but no business was done, as very few members attended.

At the October meeting, President Fred E. Ives is to give a demonstration and read a paper on a new method of making colored slides, which it is intimated will be of considerable interest. Beginning with October the usual Wednesday night lantern slide tests will occur. The interchange set of the Minneapolis and Chicago clubs will be exhibited on October 5th. The Board of Trustees recently voted to have the club continue as a member of the Lantern Slide Interchange for another year.

The American Lantern Slide Interchange.

The new season of 1904-5 of the Interchange began on September 1st and during the month the General Manager sent out a call to the thirty organizations composing the Interchange for a first contribution of slides to be prepared and sent in by November 15th next.

Box No. 2 of the Amsterdam Society of Photographers has been received, containing fifty slides, which has been combined with a new French set of fifty slides illustrating Dunkirk, France, and its commercial advantages, sent by the Photographic Society of the north of France at Douai, France.

Clubs desiring to secure the use of the Interchange sets should address the General Manager, Mr. F. C. Beach, 361 Broadway, New York.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol, Tioga Centre, N. Y.

THE PRACTICAL PHOTOGRAPHER, *American Edition*, for August is devoted to hand camera work, the subject, as usual, being dealt with by a symposium of writers who together pretty much exhaust the subject without, however, evolving anything new or indeed saying anything that has not been frequently said before.

The pictorialist selected for illustration and appreciation in this number is the well-known Frank M. Sutcliffe, of Whitby, ten of whose pictures are reproduced; and in speaking of his technique, which is always as excellent as his exquisite art, the editor says his secrets are a long focus lens with a large aperture, generally f/8 and 14 inches on a plate 8½ x 6½.

What, in noticing previous numbers, we

have called "the American Contribution," has been dispensed with in this.

* * *

MILTON WADE'S "ONE-MAN METHOD."—From Milton Wade comes a prospectus telling all about how he proposes to teach by mail and express his "One-Man Method," and it is interesting reading. Students of the literature of photography will remember that some ten or twelve years ago—we are too far from home to refer to the book—we wrote for *Wilson's Mosaics* a suggestion of just such a One-Man method that we thought then and think now would lift portrait photography out of the slough into which it had fallen, and so we welcome Mr. Wade's present effort as just the one thing needful.

Probably the best thing that we can say is that for an outlay of ten dollars Mr. R. C. Peters, of 321 Carlton avenue, Brooklyn, can write as follows:

"I cannot say too much in praise for your 'One-Man Method' and manner of instruction therein. I have discarded all help, am doing three times the output I did before, better work and of uniform quality; and therefore I feel I can't say too much in praise of the remarkable system and results. I am glad to have you refer any one to me concerning it."

This is only one of twenty-eight appreciative notices, all equally favorable in the prospectus and many more not printed; and our advice is to send for it, or, better still, send on the fee of ten dollars, to 164 Fifth avenue, New York, and whether you adopt the method or not, you will not regret the outlay. The following extract from the prospectus we thoroughly endorse *Verbum sat sapienti*:

"Any man or woman of reasonable energy and ordinary judgment desiring to follow the business and having acquired a method such as I use and teach, can to-day, with little capital, open a studio in any town and be certain of success. I am positive this statement is true. There is no chance for failure. I'll tell you why. In this present day there are two elements necessary to success in every business venture—novelty and merit. Either is valueless alone. Novelty will succeed only until they find you out. Merit will pay, only until the fellow with a novelty comes along. But, with a novel idea, backed up by meritorious results, you can count on getting permanent customers and they will involuntarily act as your agents in advertising your idea and your work. I have tried it and found it so, and, 'If I can, you can!'"

* * *

WITH THE CAMERA, the monthly notice from the Illinois College of Photography, comes, as usual, telling of continued prosperity, especially the latest added branch, the photo-engraving. In a late number we told of the adhesion of the National Asso-

ciation of Photo-Engravers to the Bissell College, and now even if possible a stronger proof of the association's favor is shown by the fact that a brother of the secretary and a son of its ex-president are pupils in the college, and in the engraving department thereof.

As usual, the circular tells of the return of many former students for review work, and of more who have either secured valuable positions or having opened studios on their own account and all doing remarkably well. The college is doing a much needed work, for the time is fast approaching when only those who are thoroughly up to date and can do work of the highest class need expect to make a living with the camera.

* * *

THE WYNNE'S EXPOSURE METERS, AND SPEED TESTER.—Henry Wenzel, Jr., of the Infallible Exposure Meter Company, 237 South Fourth street, Brooklyn, sends a batch of literature telling much about their helps to photographers in exposure and shutter speed, just the things in which they, especially during their earlier efforts, are most helpless. It is good reading, and as it is to be got for the asking, everyone who has difficulty in securing correct exposures or has doubt as to the markings on their shutters, which practically means everybody, should send for it.

* * *

IMPERIAL LANTERN SLIDE PLATES, which were introduced into this country by G. Genert a year ago, gave such universal satisfaction that he has imported a large consignment to meet the demands of the lantern season now commencing. The Imperial plates have an exceptionally fine grain and may be used to advantage for the intermediate transparency in making enlarged negatives in the copying camera.

* * *

THE PRACTICAL PHOTOGRAPHER for September (American Edition) is quite up to its usual mark. Platinum printing is the subject of its symposium, and it tells all about it that it is necessary to know. Charles Job is the subject of the usual appreciative

notice, and the nine reproductions of his work fully bear out all that is said about him. The following extract, which applies equally to many of the foremost of British photographers, is worth making a note of: "For some time past he has been using a quarter-plate hand and stand camera, a rapid plate, preferably a backed color-sensitive one, with, of course, a suitable light filter. His exhibition work is about 15 x 12; enlarged from the quarter-plate negatives."

SOME time ago the Ray Mfg. Co., of Danbury, Conn., advertised a camera free to anyone guessing a certain number. The Ray Mfg. Co. forwarded to us four sealed envelopes containing the names of four individuals who had guessed correctly. One of these was selected and the other three envelopes returned unopened. Miss K. Sinzel, 59 Avenue B, New York, was the lucky one and the camera was accordingly shipped to her.

LETTERS TO THE EDITORS.

Three-Color Photography.

"It is never too late to mend" or to confess to having left undone something that we ought to have done, and that we do now by the insertion of the following, practically forestalling the recently introduced Lumiere three-color method.

It was sent to us two and a half years ago by a nephew, Fred Allan Macrea, of 249 Fifth avenue, Troy, N. Y., but serious sickness in our family and long absence from home caused it to be laid aside and forgotten till now, when we have pleasure in publishing it so as to give what credit there may be to whom it is due:

Dear Sirs:—Here is my idea. Briefly, it is the combining of the color-screen and the sensitive plate in one plate or film. A glass plate or film is first ruled with the parallel rulings of red, green and blue. It is then coated with a thin, transparent, insoluble varnish or other medium best adapted. Over this is coated the color-sensitive film. The exposure is made with the glass side toward the lens.

It is now apparent that when this plate is developed a negative will be produced. We require to change it into a positive. There are several methods of converting a nega-

tive into a positive. One of them calls for the use of an acidulated solution of potassium permanganate, which has the property of dissolving the portion of the negative which the developer has blackened, and not affecting the deep shadows or unaltered portions of the sensitive coating. After the high lights are dissolved out, the negative plate is exposed to the light and again developed, giving a positive.

Now to my mind the advantages of my plan are several. As there will not be two surfaces to adjust in exact register, the lines can be ruled much finer, perhaps even as fine as 800 or 1,000 to the inch.

This will give better detail and probably destroy the very noticeable "ruled" effect. Again, if the idea is a practical thing, the three colors may not require to be in parallel lines at all, but may be applied in a great number of small, discontinuous fragments. This would certainly do away with the ruled effect referred to, but the suggestion is only "thrown in." Again, the process would appeal by its greater simplicity, and the taking of a colored picture direct in the camera would be accomplished.

Yours truly,

FRED ALLAN MACREA.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

FRED D. MURDOCK.—To find a leak in the camera, cap the lens or see that the shutter

is closed, and remove the focussing screen. Then, wrapping the head and back frame of

the camera in the focussing-cloth, go out into bright sunlight and turn round and round in all directions, so that every part of the bellows is directly exposed, when the smallest pinhole will reveal itself.

Some Lens Facts.

HENRY R. MILLER.—Without knowing the focal length of the lenses we cannot advise you. To say that a lens is "5 x 7" or "10 x 8" does not mean that it is suitable for pictorial work on either of these sizes. In an optician's list it only means that it will cover them, and more frequently than not if the focal length was also given, it would be seen that they were much too short. The lenses in question, that is, the distance between the front and back lens being moved nearer or farther from each during exposure, are almost as old as photography itself, having been invented first in 1851, and again in 1866, and dismissed almost as soon as introduced. We have not seen the specification, but if the patent is for so moving the lens, it must be worthless. Give us the focal length of both, but we may say at once that unless a lens is at least once and a half the length of the longest way of the plate we should consider it unfit for high class portraiture.

R. H. NORTON.—There is no best way for holding the hand camera, generally speaking. The best way for any one in particular is the way he is most accustomed to, and you can only find your best way by practice. The most successful hand camera worker we know says that his method varies with the subject; sometimes under the right arm, sometimes pressed against his chest and sometimes held on a level with his eyes.

Age of Films.

(MISS) SARAH WATSON.—Why not try them? It does not follow that because a time limit is placed on your spools of film and they are three months beyond it that they are useless or indeed in any way different from what they were when you got them. We have several spools that have been in our possession for over three years, and they are, or were two months ago, as good as ever.

J. W. GORDON.—The sooner you get rid of the idea that success depends on the use of any particular plate and any particular formula the sooner will you reach the goal. The experienced photographer will secure what he wants with any or all of them just as surely as you will fail with all so long as you try everything that is suggested.

Weak Negative.

M. G. B.—By "Image is very pale" we suppose you mean that the negative is too weak to give a good print, and if so, the best way will be to intensify it. Judging from your letter, however, we take you for only a tyro in photography and not likely to know much about intensifying, and therefore recommend you to get a bottle of the well-known "agfa" intensifier and use it according to the directions, which are simply to dilute it with nine parts of water and immerse the negative in the solution, leaving it there until sufficient density is obtained.

Buy the Best You Can Afford.

H. A. LOWE.—(1) It is contrary to rule to recommend the lenses of any particular maker, but we may say that for pictorial work the most important feature of a lens is its focal length, and unless where very rapid exposures are wanted the rectilinear is in every respect as good as the best anastigmat. It should not be forgotten, however, that most of the best portrait photographers have again and again said that the lens should not be shorter than twice the length of the longest way of the plate. While saying this, however, if we were in the lens market and money no object, we should get the anastigmat, and nothing is better than the second mentioned by you. (2) There is no such thing as "a lens made for a $6\frac{1}{2} \times 8\frac{1}{2}$ " or any other size. The optician in listing his lenses states the size of plate they will cover, and the larger the size with any given length of focus, the greater the optical triumph; but he does not by any means mean that you are to use that size in pictorial work, as he knows very well that the better the lens in the covering sense the nearer it will take you to your subject and the falser will appear the per-

spective. There is no reason why you should not use a lens listed to cover a whole plate on a half plate, but every reason why you should do so. For example, we frequently employ, and with perfect satisfaction, the rear lens of our *plastigmat* of 13 ins. on a 4 x 5. (3) We are too far from home to look up the catalogues, and without doing so cannot answer this question, but from what we have said you will have no doubt as to our advice.

Foreign Manufacture.

P. C. WALKER.—We know nothing more regarding the Bastian lamp than appeared in the article on page 276 of our June number. As will be seen there, Messrs. Rumney and Rumney, of 39 Victoria street Westminster, London, England, are the agents, and doubtless an application to them will bring all desired information.

Saving a Broken Negative.

C. C. ALFORD.—Please in future to attend to the instruction at the head of this column. Where the glass only and not the film is broken the best way is to strip the latter from the former and lay it down on another glass. There are various ways of doing this, but the following is both certain and simple: First harden the film by immersion for ten minutes in a solution of formalin 1 to 10, wash and dry. Next cut through the gelatine about $\frac{1}{8}$ in. from the edge all round, and immerse for fifteen minutes in a solution of sodium carbonate (crystals), 2 ounces in ten ounces of water. Then, without washing or much draining, transfer to a solution of hydro-chloric acid, 30 minims in ten ounces of water. When the film begins to pucker and get loose it should be gently assisted, when it will float off the broken plate. We omitted to say that from the start the broken negative should be supported on a plate a little larger than itself. The floating film should be washed in several changes of water and transferred to a plate that has been coated with collodion, and squeezed in the usual way. It might be as well after hardening and drying and before cutting round the edges, to give it a coat of enamel collodion, although that is

not absolutely necessary. If you do not care to take so much trouble you might try the method suggested in "Notes" on another page, although, where many prints are required, the above is to be preferred.

Not "All in the Lens."

W. O. DUSTIN.—We do not, without their authority, give the addresses of our correspondents, but the following will sufficiently answer your questions.

The lens referred to as costing \$14 is an ordinary rectilinear, and even a single lens at less than half that price would be equally good for pictorial purposes. Either of them, for landscape or portraiture, is quite as suitable, and will give in every respect as fine pictures as your very much more expensive one; and indeed very much better if they were of longer focus.

The most important feature of a lens for pictorial work is its focal length, which should never be less than the diagonal of the plate, and once and a half the longest way is very much better. See an article on lenses in late numbers.

Experience is the Best Teacher.

M. J. SHIELDS.—We could better advise if we knew the object you have in view. If to turn professional photographer, and as you can give to it only Sundays and evenings, then, by all means avail yourself of one of the "Correspondence Schools." Even if you mean to remain an amateur, but desire to do pictorial work with a view to exhibiting, you would reach your goal sooner by learning the necessary technique by correspondence. But if your aim is nothing higher than amusement or change of occupation, as is the case with probably 90 per cent. of all who carry cameras, then join the great army of self-taughts, as with few exceptions indeed all the best pictorialists are. Get a suitable book of instructions, and when you have mastered the first difficulties get a photographic friend to show you a good negative as something to work up to; and you will find as much pleasure in the learning as in the work after you have learned.

WHAT NEXT? UNIV OF MICH

F. H. Smith.

THE
AMERICAN AMATEUR PHOTOGRAPHER.

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LANTERN SLIDES.

THE fall of the leaf reminds us that the time for our annual talk about lantern slides is at hand; and we begin as usual by the statement that a good slide is one of the most beautiful and at the same time the most useful of all photographic productions, and the expression of our surprise that so few photographers include that method of printing from their negatives, and so few even of that small number succeed in making really fine slides. For several years pressure of other matters has prevented our seeing and criticising the interchange slides, but up to the last that we saw, notwithstanding the many years' practice, less than five per cent. of any of the sets were such, that practice considered, as should have been thought passable; and that mainly for lack of exposure,

giving in the slide bare glass where there should have been none, and on the screen masses of light generally characterized as "summer snow;" hard brilliant pictures that "brought down the house" filled with the uncultured but discouraging to those who looked for the beauty of full gradation.

The first step in slide making is to know what a good slide is, a knowledge which, to judge from at least ninety per cent. of all the slides that we have seen, is just what their makers have not acquired, their slides having even shorter gradation than their prints on paper, while they may have every degree that is in the negative. Bare glass in a slide is the highest of high lights on the screen, while such parts as are opaque show as the deepest of deep shadows, and in nature

that are none or the fewest of the few of either. A good slide therefore will show bare glass only in the highest of high lights and be opaque only in the deepest of deep shadows, and between those will be more or less translucent to the light by which it is shown throughout the whole of the gradation that was in the negative from which it was made. From this it will be evident that the second step is the selection of the negative, and here we may say at once that those who have during the season persisted in the craze for under-exposing, and have nothing but the hard soot and white-wash negatives as the result of the season's work, may abandon the idea of slide making till they have learned that without sufficient exposure they cannot make negatives suitable for that purpose. A negative suitable for slide making must have been suitably exposed, over rather than under, on the soft and thin side, with nothing but the highest of high lights opaque and nothing but the deepest of deep shadows clear glass, and all the rest in the varying degrees of gradation or different values of light reflected from the subject.

Having suitable negatives the next thing is to select a lantern plate. We have tried all that are on the American market and can honestly say that they are all equally good although each has its own peculiarities, and therefore we recommend the adoption of one brand and sticking to it for one season at least. But whichever is selected it should be backed, as we say most emphatically that backing is essential for

the production of first class slides. Just what the backing should be is of less importance, but any of the commercial backings, especially those of Pancoast of Philadelphia and Newcomb of Stamford, as they answer the purpose admirably and as a 25 cent bottle or a 50 cent pot of either will back hundreds of plates there is no temptation to bother with a home-made article.

We next come to the developer the formula of which is of less importance than that one should be selected and stuck to, and that the exposure should be made to suit it, never it altered to suit the exposure. The following recommended by Yellott in his admirable *Lantern Slides and Slide Making*, may be taken as a type, and is:

Ortol	70 grs.
Potassium metabisulphite.....	35 grs.
Potassium carbonate.....	½ oz.
Sodium sulphite.....	1¾ oz.
Potassium bromide.....	10 grs.
Water	20 ozs.

This is a stock solution one part of which is to be added to two parts of water to make the developer, but we should prefer to use an ounce and a half of sodium carbonate instead of the potassium carbonate, the same quantity of the sulphite and leave out the bromide. With this or any other suitable developer the exposure should be such as to bring out the various degrees of gradation each in its turn, and the action should be continued till the slide is just as it should be, or if that is somewhat difficult it may be carried a little further trusting to reduction to bring it back.

It may be, however, that for some reason a slide is wanted from a negative that from under-exposure is unsuitable, and would give only a slide hard and lacking in detail in the shadows, a "summer snow" effect in short, in which everything that should be only in half or lesser lights was simply the white screen. From such, a slide that is more than passable may be made by the plan introduced by Stieglitz of utilizing the cover and making a deposit in it to fill up the otherwise objectionable bare glass in the faulty slide. The plan consists in exposing the cover glass, in this case another plate, for the short time to the

washed and dried slide, developing only till the deposit is just sufficient when brought into register with it to supply the lacking detail. In this way a slide more than fairly passable may be made from a negative otherwise impossible.

When one has overcome the difficulties, and in spite of what has been said of the simplicity of slide making, there are difficulties, it might be well to think of something more than the usual unadorned slide. The ordinary picture on the screen is a picture without a frame, and there are few that would not be improved with that addition. Various schemes have been proposed for supplying that want,

the simplest being a frame slide placed along with the other or made a fixture in the carrier. But while the simplest this is not the best, as it confines all the pictures to one size and shape, which in commercial slides may be permitted but leads to a disagreeable monotony. A better though a more troublesome way is to furnish each slide with its own frame, and as the trouble or labor is in the making of the slides it gives a corresponding simplicity in the exhibiting of them.

For this purpose a supply of frame negatives should be prepared by photographing as many suitable frames as one can lay his hands on, preferably on slide plates to facilitate registration, and of various sizes and shapes. They should be lighted from the side so as to get sufficient light and shade,

the best density being learned by experience, and all but the frame both outside and in made opaque in any suitable way. Each frame negative requires its own mask, preferably of thin needle paper, and just such as will protect the frame and all outside of it leaving the square or oblong center on which to print the subject.

The method of application hardly needs explanation. As to which is first printed is a matter of choice, although we have always chosen the subject. Having selected the suitable frame negative, its mask was laid on the plate and the subject printed, care having been taken to have such pencil point marks as to make registration easy, and then the frame negative was printed in the same way.

AN OPTICAL MARVEL.

FEW, we believe, on reading on another page of the introduction of a lens with a working aperture of $f-2.2$, will fully realize just what or how much that means. Not for the first time does a lens with such an aperture appear; two at least we can remember, one trusting to the refractive power of glass alone, the other combining it with a liquid, but the first was of too short focus to be of much use and the other the outcome of the ingenuity of Dr. Grune whose writings on optical matters do not inspire confidence in his ability in that direction, and the less said of

the lens and its behaviour the better. The lens in question is a very different affair. The series includes three with focal lengths of 8 1-2, 11 1-2, and 14 1-2 inches, and with diameters of 4 1-16, 5 1-4, and 6 3-4 inches. Think of a lens with a diameter of about half its focal length, especially when that length is over 14 inches!

It goes without saying that such a lens must be costly, but when all things are considered, and especially the new powers it brings into the portrait studio, the \$500 must be found a good investment.

Thinking of the saving of time that

the possession of such a lens implies reminds us of a story that we may have told before but it will bear telling again. In the long long ago when the "Process-monger" was more in evidence than now, one such called on "Old" Neilson, a quaint and much loved professional photographer in Edinburgh, offering to sell him for five guineas a method by which his exposures could be reduced by one-half. (it proved to be the once well known method of "pre-lighting, —the subjecting of the plate just before being put into the dark slide to a lighted match for a brief moment). "A delightful method" replied our friend, "and one that will be especially useful to me, my trade being so largely

in babies; but I shall wait till another good friend to the photographer comes round with a method for getting rid of the other half and shall then invest in both, thus getting rid of the trouble of exposing altogether."

While not quite obliterating time, the lens at $f-2.2$ is about four times faster than the ordinary portrait lens wrought at its largest aperture, a thing rarely done; and so far as we have been able to observe, it is rarely used with an aperture larger than $f-6$ and more frequently $f-8$ than which the new lens is sixteen times as fast; as it should not be forgotten that while the older form must, in many cases be stopped down because of want of certain corrections, that by the em-

ployment of the newer glass, the makers have been able to make in the newer lens, it may be employed at full aperture.

We have watched the growth of the Bausch & Lomb Company from a very small beginning to the present time when its factory is probably the largest and best equipped in the world, and we have seen the pains taking

way in which at every stage of its progress every lens, both photographic and microscopic is tested with a view to the ultimate perfection of the instruments in their catalogues; and believe that in this portrait lens with an equivalent focus of 14 1-2 inches and a working aperture of f-2.2 they have made a record that it will be difficult to beat.

GETTING THEM INTERESTED AND THE RESULTS.

BY OSCAR VON ENGELN.



WO out of three of your friends to whom you show a collection of your pictures will evince thrice the interest in a group picture taken with the side of a house for a background than in your best thing in landscape. No doubt quite a few of us never make a second attempt to enthuse such persons on the subject. But I have always the feeling that at the same time they are passing judgment on my mania for getting such things, and think that I am foolish for spending so much time, effort and money for what seems to them a poor return.

You may argue that they are not worth considering, but they are, and not only for the sake of righting yourself in their eyes, but also for the sake of aiding them to see by the true light, you ought to endeavor to win their commendation of your work along true pictorial lines.

No one will contradict me when I assert that the conversion of one of these scoffers to an admirer of the real

fuzzy tuzzy type, borders on the impossible. But there is a way of securing and holding their interest—to plant the germ of true appreciation as it were.

Series picture photography accomplishes this end. By series pictures, I mean a set of three or more views of the same subject at different times, or under different conditions. The same scene photographed in the spring, summer, autumn and winter illustrates the first—a street crowded, quiet, at night, on a wet day, in winter, the second.

Man is intensely interested in the evolution of a thing; he likes to know the processes by which the whole is made up. Moreover show a series of such pictures to any one and you compel them to mental activity. The viewer must compare and discriminate, and he cannot help but assimilate.

The value of such a series to the photographer personally is very great and rests on a broad foundation.

Since the pictorial interest is the same, his attention is drawn to the

technical defects in his negatives, when he compares the prints. He notes faults in one which are not evident in the others and vice versa. He finds that he is not as careful as he might be in his work. My need of accuracy was made clear to me by the want of uniformity in the prints I show below, as regards point of view and matter included. Naturally one aims to overcome these faults in future negatives, and, therefore, works with a more definite purpose.

The educational value of such work for the photographer is alone very great. Working with the same subject makes it necessary for him to study it intensively. If he photo-

graphs a plant from the day of its appearance above the surface of the earth until fruition, he of necessity, because of his constant vigil for the interesting stages, becomes very intimately acquainted with its life history. Broad culture is the slogan of the day, but a little knowledge of many things is dangerous, as the saying has it, and I am sure no one of us will come to harm intellectually, because of a little specializing.

I venture to present herewith four prints illustrative.

They are crude, they are poor, they have all faults, yet they are full of interest for me. I first photographed the scene in summer. Its luxuriance

SPRING.

Oscar Von Engeln.

SUMMER

Oscar Von Engeln

AUTUMN.

Oscar Von Engeln.

WINTER.

Oscar Von Engeln.

attracted me then, being a bit of nature typical and thoroughly characteristic of a stream winding its way through a region of hard wood timber.

The next picture was made in winter, and it has also pictorial interest, besides that which falls to it as one of the series.

The spring view is typical of that season of the year, and all the feeling of feathery plumage is in the young leafage of the trees. Also the autumn

view is characteristic—bleak and drear.

Another fact comes out very clearly here which ordinarily escapes our notice; the change of face which nature is continually undergoing. This is much more extensive and rapid than we conceive. Note that in the earlier pictures there are two broken tree trunks projecting out over the water; in the latter only one.

Other changes may be found when we examine the prints in detail.

THE SUCCESS OF A FIRST ATTEMPT.

With the 3 A. F. P. K. and the Developing Machine, and the Wynne Exposure Meter.

By HARRY CORTWRIGHT.

HERE followeth the story of sixty film negatives, all more than printable and some, a good many indeed, that if enlarged would be a credit to an experienced photographer and yet they were produced by one who knew absolutely nothing of photography until she spent less than an hour with me just before taking train for distant parts.

She was a Niece of seventeen, brighter than the average, and with unlimited faith in her Uncle's photographic knowledge and therefore willing to do exactly as she was told. A few minutes served to get her thoroughly acquainted with the mechanical arrangements of the camera although the relation of the U S markings on the shutter to the f values of

the meter were more difficult to understand. Just why the Kodak people and Bausch & Lomb should persist in that obsolete method of marking no fellow can understand; but she mastered it at last and all the rest was easy.

The only part of the business on which there was a doubt was the time to be given in the developing machine, as edinol was selected as the developer for its non-staining properties amongst others. A few experiments had shown me that the formula I had devised took an average of thirty seconds for the "first appearance" and so the time decided on was ten minutes, which, as the result proves, was just the thing. Not caring, however, to trust altogether to that, she took with her three film negatives one

over, one under, and one just properly developed, with instructions to compare each length of film on coming out of the machine, and to be guided accordingly. But she never needed to change the time, the ten minutes being in all cases just right, giving negatives as near the middle one of the three, and as a whole, they could not have been bettered.

That others may go and do likewise I may say that the developer, the quantity for the required 24 ounces, consisted of edinol 30 grains, hydro-

quinone 6 grains, sodium carbonate and sulphite each one ounce; and acetone sulphite 60 grains. The first two and the last three were wrapped in separate paraffin papers and then in tin foil, in which they apparently keep indefinitely. The hypo was in 8 ounce packets, also in paraffin paper, but she only carried a third of the number of the developing powders, being told that several spools of film, indeed all that might be developed at one sitting might safely be fixed in one solution.

THE AMATEUR QUESTION.

BY KATE HARRISON.

THE question as to what is an amateur is continually bobbing up, and what really should be no question at all seems to be as far from settlement as ever. The question is not as to the exact meaning of the word else the dictionary would soon settle it, but as to what it should mean when applied to a photographer, and especially in connection with such exhibitions as offer certain prizes for amateurs and certain others for professionals. The latest attempt to settle the question appears in *The Camera*, which offers prizes for the best answers to the following questions:

What is an amateur photographer? Is it permissible for one to sell his work occasionally and realize a portion on the expenditures made? Should an

amateur give his work away, or is it right to charge for it?

Although in the form of four questions it resolves itself into only one, may an amateur sell one or more of his photographs and continue to be an amateur, or to put in another form, does he become a professional by such sales? To me the idea is too ridiculous to be seriously considered, and the line of demarkation between the professional and the amateur is too clear for any sane man or woman to have a doubt of it. To the one his business, trade, or profession, which you will, is that by which he makes his living, and looks to it for the preparation for old age or the "rainy day" that may come, while to the other who may be clerk or any of the thousand and one occupations of

bread-winning, his photography is only an amusement, hobby, or change of occupation; a something to fill a leisure hour, and from which he returns to his life work with renewed energy.

"Is it permissible for one to sell his work?" What conceivable reason can there be that he should not? Surely one may do what he likes with his own so long as he thereby does no harm to others; and here perhaps is the rub. There are those silly enough to think that such sales may injure the professional, but even if so what about it? Surely the hanging out of a shingle does not give one a monopoly of picture making light, nor is it an essential preliminary to the making and selling of pictures. But does the sale of pictures by the amateur injure the professional? I trow not, and a visit to some of the more important exhibitions will show that such sales

serve as levers to lift him and his work to a higher rung in the pictorial ladder. What is the best test as to the value of works of art? Surely the prices obtained, and it is a well known fact that in some cases the amateur values his work at pounds where the professional is content with shillings. These may be said to be rare cases and so they are, but as a rule the amateur asks and gets better prices than the professional and so helps rather than hinders him.

Of course, there are exceptions, cases where the amateur seeks only sufficient to cover the cost of his outlay and in that I think he is wrong. By all the laws of God and man he is entitled to sell as much of his work as he can, but he should have a fellow feeling for his kind and *never* charge less than his professional brother but as often as he can, which is *always*, charge a little more.

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

THERE is sometimes amusing reading in some of our contemporaries. Here is an example in the shape of an "interview" with a Baltimore photographer who had recently visited Paris, Brighton and London. He had brought with him "the latest thing in art lines on the market" which turned out to be the Grun lens, which has been weighed in the balance and found wanting

at least a couple of years ago. The Baltimore photographer's knowledge of lenses may be guessed at from the fact that his admiration for the liquid lens arises from the other fact (?) that while "all first class lenses have four lenses each, and each lens refracts only about 50 per cent. of the light received, the Grun lens has a liquid between two of the lenses, practically uniting them and making but

THE STAINED GOWN.

POEM, OF WHICH

Edmund Stirling.

one reflecting surface instead of two, thereby obtaining greater speed in photographing." Just think of it. Four lenses each refracting only 50 per cent. of the light received, and try to discover where the second pair gets any to refract. But Dr. Grun showed this credulous Baltimorean some other curious things, and they may have helped him to get over that puzzle also. One of these was a theory which our Baltimore friend says "has since been accepted" but he does not say by whom, "that there is a germ of rheumatism which is introduced through the large pores of the feet!" and that by wearing the same shoes and stockings continuously "the resulting impurities produce the microbe of rheumatism." That discovery is surely as wonderful as the other, that a lens refracts only 50 per cent. of the light that falls on it, and he who can swallow the one should have no difficulty in believing the other.

* * *

Photographic journals are not supposed to be comic papers, but those that care to look for it will often find much to amuse them. The good serious "B. J." even is not exempt as may be seen from a recent article on "Lens Rapidity." In this the author begins by threatening to upset what he calls the venerable dogma that the rapidity of a lens depends on the size of its working aperture, the *relative* working aperture he means, and says "if this were really true the giving of correct exposures would be far easier than is unhappily the case."

After this one would have supposed that he had something new with which to startle the erstwhile deluded photographer, making him call himself all sorts of names for having so long remained in ignorance of something on which so much depended.

And what is it that warrants our new Daniel in saying that "the universally-received belief that lens rapidity depends on the width of the working aperture is only partially true," and again, "that it is not only not the sole factor governing rapidity, but it is not the most important one." Boiled down, the arraignments are practically five, discoloration of the glass through chemical action; striae; air-bubbles; uneven dessication of the "so-called" cement even when it is good but more when, as is too often the case, it is of inferior quality; and dust allowed to lie on the outer or inner surfaces. The discoloration may be dismissed as of too infrequent occurrence, and the fact that no photographer worth the name would ever think of using such lenses, and surely the same may be said of the dust scare. The others, so far as they are beyond the power of the photographer to remedy are not worth thinking about, as notwithstanding the opinion of the writer, their influence on the rapidity of the lens is so infinitesimal that it would require a greater number of figures than I at least know how to use, to show its true relation.

* * *

The following clipping from *The British Journal of Photography* is well

worth the attention of entertainers generally, as it is likely to be as good a seat-filler on this as on the other side, and if the vaudeville folk know what is good for them the music hall photographer will be as important a member of the staff as the best:

"Quite a novel bid for popularity is now nightly drawing all Leeds to the Coliseum Music Hall. During the evening some thirty photographs of people snapshotted in the street are exhibited on a screen, and if any of the persons happen to be in the house and recognize themselves they receive a sovereign each. Fresh photographs are shown every night."

* * *

If to make a thing ludicrous be the best way to kill it, the following by Dagonet in *The Referee*, should be effectual. But lightning stories have more lives than cats and bob up time and again, always finding hosts of believers. I give it, however, for what it is worth and it ought to be worth much in the strangling of the delusion.

"It seems that a woman struck by lightning while looking at a cow had a photograph of the cow reproduced on her chest by the lightning. A man standing near a sacred picture was struck, and the picture was reproduced on his back. The new method of photography is hardly likely to be popular with private sitters. But imagine the possibilities. Think of the thrills now available for sensational romance. Fancy the joy of the melodramatist who for four acts has

allowed the innocent man to be falsely accused of the murder of the lock-keeper's daughter, when he arranges for the hero to tear aside the villain's waistcoat in the last act, and point to the picture of the murdered girl on his shirt-front. N. B.—This situation is registered at Stationers' Hall and in the United States of America according to the Act of Congress. Pirates, beware."

* * *

The designations negatives and positives were mistakes from the beginning but have been in use too long to be altered now. All negatives are also positives and *vice versa*, positive when seen by reflected and negative by transmitted light. And the case is made worse when an author writing about them gets them mixed as does Will Sparks in a recent number of *Camera Craft*. He is speaking of a suggested improvement in photo-gravure in which a line screen is employed, a screen with four hundred lines to the inch, and in telling how the line positive is made, by placing the screen in front of the negative to be reproduced and, in the copying camera, transmitting the light through both to the plate on which the positive is to be made; he says "the resulting screen *negative* is what would be called a positive." The italics are mine, emphasized to show how easy it is to get mixed.

* * *

While it is gratifying to the amateur to know that his work in por-

traiture is being more and more favorably compared with that of his professional brother it should not be forgotten that they do not work on equal planes. The amateur works to please himself, and if blest with the artistic temperament, cares more for the artistic and the pictorial than the likeness, while the professional must please his employer who, generally at least, cares more for likeness than the artistic or the pictorial. The professional must therefore be judged, not so much for what he does, as from the degree of culture of his customers, or, what is perhaps more satisfactory, by the work he shows at the exhibitions and in the salons.

* * *

Photography says "One of the great hindrances to the production of good photographs is the terrible ease with which bad ones can be made; and at first glance it seems something like truth. But not the "fatal facility" by which the bad work is made while not preventing a single example of the good, appears in such shoals as to bury it and making its discovery like the proverbial looking for a needle in a bundle of straw.

* * *

I have never been able to understand the alleged difficulty in communication between the lantern lecturer and the lantern operator, nor the need for any of the many means of making that communication. The bell, the red light on the back of the reading lantern, the stroke on the floor with

the pointer and all the other abominations to me at least only show the incapacity of both, as the one that cannot give and the other that cannot take a hint from the words that tell when to change the slide and at the same time be such that they not only seem to be, but actually are a part of the lecture that could not have been omitted. And I have had some experience, having been the official lecturer of the Edinburgh Photographic Society for years, where during the winter months the hall was filled to overflowing from month to month; in addition to lecturing in most of the larger towns in Scotland year after year, and never used bell, book or candle. That I never used book is perhaps not quite correct, as I always held in my hand as many cards as I had slides, never more than fifty, and on each were all the notes I needed for each slide. Simultaneously with each change of slide its card was slipped from the front to the back, and there was always light enough from the screen to show all I wanted.

But while I say that the lecturer and operator who cannot do without either book or signal are unfit for the jobs I know that many such will take to the platform and the lantern, and for them a signal mentioned in the October *Photogram* is the least objectionable that I have seen proposed. The new device is to employ the now common electric pocket flash lamp for the signalling. A twin flexible cord is carried from lantern to lecturer, and the lamp placed in a suitable position

on the lantern table; a small push is kept by the lecturer, and each time a change is required he simply "presses the button" and the flash is seen by the operator. The lamp can be so placed that no one but the man at the lantern can see it. The slight expense is also a great consideration, as these lamps can be procured now from 50 c. upwards.

* * *

I have more than once spoken of so-called "pot-hunting," something not altogether unknown on this side, but nothing like what is said to be common on the other. Writing in one of the English journals, a member of a photographic society that held an annual exhibition says "There were a couple of photographic-figure subjects, sent by a Yorkshire gentleman, which had now been sent to that exhibition three times," adding that while he did not object to the sending of the same picture to as many different exhibitions as he chose, he thought the selecting committee should reject such as had been on the wall before. So think I, when they are sent in competition, or not by request, as the one-picture man is as bad as one-anything else man, who, by a fluke, has produced something for which he wants the credit due to natural or acquired ability.

* * *

It goes against the grain to be everlastingly finding fault with one's neighbors, but statements once made and not contradicted find their way from book to book and often lead the

too confiding ones astray. The present is not serious, but if developers are to be made by the help of scales and weights it is better to be right than wrong, even in matters of but little moment. The statement dealt with now appears in "The Round Robin Guild" of the generally correct and always beautiful *Photo-Era*, and is in an article on the preparation of solutions, and curiously enough, after telling the readers that "in preparing formulae the exact amount specified for each ingredient must be used, a variation of a few grains often making a great difference in the action of the solution."

After this one would have thought the writer would have taken care to be correct in her statements, but we are gravely told that "Carbonate of potassium may be substituted for the carbonate of soda in the developer, and is of *equal strength*" (the italics are mine), "and the same amount is used as is called for of the carbonate of soda." It does not take many experiments to show that the potassium salt is considerably stronger than that of the sodium, nor much chemical knowledge to prove that that difference is as 138 is to 106, the potassium salt being about one-fourth stronger than the sodium, and in a formula with the alkali just short of the fogging strength in soda the substitution of potassium would certainly bring trouble. Ten molecules of water (180 atoms) make a big hole in the 286 that go to make a molecule of sodium carbonate.

NOTES.

ALFRED STIEGLITZ AND THE INTERNATIONAL JURY AT ST. LOUIS.—In a communication just to hand (dated September 13), Mr. Stieglitz says "I have just received an invitation from St. Louis to serve on the International Jury of Awards, which, of course it is too late for me to accept. I appreciate the distinction and regret that circumstances prevent my doing my duty as an American citizen." So do we, so far as the regret is concerned, as the name selected as his substitute has considerable climbing to do before he can reach his level.

PLACING THE COLOR SCREEN.—According to M. H. Camels in *Le Procédé*, the worst possible place to place the color screen in orthochromatic or three color photography is between the lenses of a doublet. In such, the back lens corrects certain of the faults of the front and anything placed between is apt to interfere with that correction. The screen should be placed either before or behind the lens, but better still, close in front of the plate, and we understand that films for that purpose are already on the market in Germany and may soon be found here. A suggestion in one of our foreign exchanges to the effect that makers of plates should furnish them with films of suitably colored gelatine, just as they back them, would, if practicable, solve the problem, and few would object to the increased price that such a "fronting" would entail.

DEVELOPMENT OF OVER-EXPOSURES.—Over-exposure is a fault of rare occurrence on this side, and we have more than once shown that it is one easily cured; indeed over-exposure even to the extent of fifty times the normal is less an evil than its opposite to the extent of only twice, and that the more especially because of its tendency to lead to over-development with its outcome of "soot and whitewash." We have, in this connection, already shown the power of acetone sulphite, but a good thing will bear a second telling, especially when it comes from such an experienced worker as T. Thorne Baker. Dealing with the treatment of over-exposures in *The Amateur Photographer*, he recommends the keeping of a solution of acetone sulphite 10 parts, edinol 1 part, and water 100 parts. As soon as over-exposure is discovered a portion of this should be added to the normal developer, the quantity depending on the extent of that over time; adding that plates or films that had got fifty times more than they should could be made into excellent negatives by the addition of twenty-five per cent. of the acetone sulphite solution.

A SAFE LIGHT.—A light that is said to be safe for the development of any orthochromatic or even panchromatic plate that is not unusually sensitive to the red, may be made from a combination of aurantia and rhodamine, the one absorbing all but the blue and the other transmitting all but that color,

leaving to light the developing tray only the red. The simplest way to go about it is to immerse two ordinary plates in a solution of hypo till the silver bromide is removed, wash and dry, and immerse one in each of the solutions of the dyes. They are aurantia 20 grains, water to which a few drops of ammonia has been added, 1 ounce; and rhodamine 15 grains; water 1 ounce. Filter the solutions and immerse one plate into the one and other into the other till they have absorbed sufficient of the color. Rinse slightly, dry, and bind the two together lantern slide fashion; or better still, cement them together with Canada balsam in the well known way before binding.

MEN AND WOMEN.—The editor of *Men and Women*, a Cleveland magazine, writes to say that they have a proposition that is particularly interesting to amateur photographers, and without saying what it is, coolly asks us to furnish them with the addresses of a number of amateur photographers in various parts of the country, without sending a stamp for reply. Accompanying the unusual request comes a leaflet intimating 21 contests beginning with October and ending with "is open now" but without giving the necessary information or dates, for all of which photographers are supposed to make inquiries, a thing which we presume few are likely to do. We are always willing to give publicity to such contests but our time is too valuable to be spent in making lists of amateur photog-

raphers, especially to those who do not consider it necessary to send a stamp to pay the postage.

THE LATE JAMES INGLIS.—We cannot let the memory of this characteristic Scotchman and equally characteristic photographer pass without a word of appreciation and expression of regret. We knew him in Montreal when he had the ball at his foot as one of the most successful portrait photographers of the city, and we knew him again in Chicago many years after; and knew that in both conditions he might have carried all before him, but his success was always the cause of his failure. He was one of the few, perhaps we might say one of the many who can never let well alone, but always in the success they attain see something higher and cannot rest till they have sought it, and in the search too often lose that which they have gained. Such at least was the case of poor Inglis, who in his desire to "advance the cause," always some particular branch or phase of photography, often overlooked his own interests. But the good that men do lives after them, and Inglis' name will be remembered long after sorrows that have made a greater noise in the world are forgotten. He had a large share of the obstinacy said to be characteristic of his countrymen, but like them too, he took care to see that he was right thereby making obstinacy a virtue.

The inability to leave well alone led to his almost untimely death, as death is always untimely so long as there is good work in a man, and the follow-

ing account of how it came about, written by his close friend Mr. Todd, tells the sad story better than anything we could say:

"A year ago he turned his attention to 'at home' portraiture by flashlight, and, true to his old instinct, set out to make improvements. First, he designed a flash-lamp in which the smoke is caught in a bag, so that it cannot escape into the room. It is a very simple, effective contrivance that is bound to meet with great favor among professional photographers, and had he stopped here everything might have been all right. But the improving tendency turned him on to the flashlight mixture, much to my dismay. He had decided in his mind that it must be possible to make a first-class portrait with less than five grains of powder, and he proceeded to prove his case, by doing it with only two. Knowing the nature of the man and the character of the compound, I urged him to leave the whole thing absolutely alone, but, I regret to say, without success. The best person to

make flashlight mixture is one of naturally slow habit. James Inglis was not built that way, so one day he got tired of slow monotony, moved the mixer considerably faster—and was picked up for dead.

"He made a magnificent fight for life. His injuries were frightful; but his grand constitution seemed to stand the strain, and at the end of a month every one was hopeful of a good recovery. But pneumonia set in, and on September 18 he died." *Requiescat in pace.*

THE BAYER PHOTOGRAPHIC SPECIALTIES.—We have often spoken of the photographic specialties made by the Bayer Co., the sale agents in this country being the Farbenfabriken of Elberfeld Co., of 40 Stone St., New York, and we are glad to see that they are as popular in their home in Germany as here; they having got the highest award, the silver medal, at the exhibition of the thirty-third Congress of the German Photographic Union.

AN IMPROVEMENT IN THE YELLOW LIGHT USED IN PHOTOGRAPHIC LABORATORIES.

ACCORDING to *La Nature*, Mr. Charles Henry reports in this matter as follows:

"In September, 1899, I have presented to the 'French Photographic Society,' together with Mr. Jules Courtier, some screens dyed with a yellow color which we have named 'anactinochrome,' and which, although being considerably less actinic and

more opaque for the visible light than the red glass panes usually employed in photographic laboratories, are decidedly more convenient on account of the special property which the yellow light has in exciting the visual sensiveness, a property which is associated with the energy of yellow rays.

Mr. G. Mareschal has published the results of the tests to which he has

submitted these screens, and considers them almost indispensable since the manufacture of plates of ever increasing sensitiveness.

I have tried to apply a method of color transformation in dyeing these screens which I had studied in the laboratory of the Goy works, and the result was that anactinochrine could be transformed into a new color which I call anactinochrine b, and which is sensitively more actinic and more illuminating at once than the anactinochrine heretofore used, which I now shall call anactinochrine a.

I have exposed a Luminere plate (blue label) for one minute to the light of a Carcel lamp (Bengel burner) at 0.30 meters. This plate was covered with a single coat of anactinochrine a and b; in practice two sheets are inserted between two panes of window glass in a lantern. In developing, the plate appeared to be sensitively more reduced under a than under b. The cuts a and b represent positive proofs taken on citrate paper from negatives obtained by this test; the positive under a is sensitively clearer than that under b.

If we compare the transparency of the negatives printed under a and b respectively to that of a dim glass taken as a standard or unity with a photometer having diaphragmatic objectives, we shall find for the openings required for equalizing of the shades (tints):

Dim Glass.....	10
Negative A.....	190
Dim Glass.....	15
Negative b.....	85

The luminous intensities transmitted being inversely in proportion to the openings necessary for equalizing the figures of the transparencies of the negatives printed under a and under b in comparison to those of dim glass are as follows:

$$\frac{1}{190} : \frac{1}{10} = \frac{1}{19} \text{ and } \frac{1}{85} : \frac{1}{15} = \frac{3}{17}$$

i. e., that the negative under b is 3, 4 times more transparent than under a.

A direct comparison of the two negatives to the same photometer has given for the openings:

Negative b...8.4 Negative a...31.6

And for the transparencies the concordant figure:

$$\frac{31.6}{8.4} = 3.7$$

The relative actinism of a and b is measured by the weights and the thicknesses of silver reduced under these screens in the two negatives. A first coat of silver grains is absorbing a certain fraction of the incident light; the second coat absorbs the same fraction of the light transmitted by the first coat; for instance:

If the first coat absorbs $\frac{1}{2}$, the second one will absorb

$$\frac{1}{2} \times \frac{1}{2}, \text{ i. e. } (\frac{1}{2})^2;$$

the third $\frac{1}{2} \times \frac{1}{2} \times \frac{1}{2} = (\frac{1}{2})^3$, etc. i. e., that while the coats increasing in arithmetical progression the opacities increase in geometrical progression; in other words, the amount of silver decreases in the negatives or the actinisms of a and of b increase as the logarithms of the opacities. We

therefore have for these actimisms the following proportions: b is dark from 87.5. Blue is $\frac{1}{4}$ less spread in b ($1 = 59$ for the ray D).

Colors	Transversal divisions of the micrometer.	Openings for Equalization		Intensity of b, compared to white	Openings for Equalization		Intensity of a, compared to white
		white paper	anact. b		white paper	anact. a	
Red.....	35	110.2	88.8	1.24	107.5	92.5	1 1
Orange.....	45	103	97	1.07	107	93	1 1
Yellow.....	55	100	100	1.00	107.5	92.5	1 1
Yellowish Green....	65	100	100	1.00	77	123	0 63
Green.....	75	75	125	0.62	75	123	0.62
Blue.....	85	40	160	0.25	40	160	0 25

The anactinochrine a is about 70 per cent. more actimic than anactinochrine b.

Anactinochrine b is to the eye sensitively greener than anactinochrine a and at the same time of a clearer or brighter tint. Which are the transparencies in visible light of these two screens? The tints being different, we could not think of making a global photometric comparison. I have gone back to the spectrophotometer and compared with a white paper diffraction spectrum the respective intensities of the spectra transmitted through colored papers, either by a or by b in the different colors.

While the spectrum of a is still visible at the grade of 90, the spectrum

These tables show that b, more intense in the red and in the greenish yellow than a, is a little less intense in the yellow.

We find in the relative total intensity of b, 5.12, and in that of a, 4.8, thus gaining.

$$\frac{5.12-4.8}{4.8} = 6\% \text{ in favor of the anactinochrine transparency of b.}$$

Anactinochrine b thus offers a great improvement on anactinochrine a, in respect to its lighting effect as to its inactinism as well. We beg to recall that anactinochrine a being four times stronger in its lighting effect than red glass shows in comparison to the latter a diminished actinism in proportion of 4 to 3.

TIMING DEVELOPMENT BY THE FACTORIAL SYSTEM.

DEVELOPMENT by factorial time is so simple and so efficient that we feel as if we could not bring it too frequently before our readers, and therefore we

gladly clip the following from *The Photographic News*:

"Iris," the well-known writer of the photographic column in the weekly edition of the Leeds Mercury.

in the course of some interesting "Elementary Notes," writes as follows on the subject of the timing, or factorial, system of development:

ITS THEORY.

The factorial, or timing, system of development is probably one of those very subjects that scare off the novice from close investigation into its mysteries by its apparent complication of equations and arithmetical calculations. Briefly, it is simply a method of estimating completion of development by a lapse of time from the first appearance of the image upon the plate, as against the ordinary, or tentative, system, in which sufficiency of development is judged by the appearance of the negative in the dish or by transmitted light.

It was Mr. Alfred Watkins, of exposure-meter fame, who first pointed out that, with a given developing agent (reducer), the ratio of time that elapsed between the first appearance of the image after pouring on the developer and the arrival at that stage of development yielding the best printing contrasts was always the same, no matter how strong or weak in accelerator (quick or slow acting) the developing mixture might be.

ITS ADVANTAGE.

The two chief advantages claimed for this method over the usual one of developing are—(1) The proper stage at which to stop development is arrived at, with absolute certainty, by a simple multiplication calculation; and (2) there is no need to uncover the dish containing the plate in progress

of development between the first signs of the image "coming up" and the arrival at that stage; hence less possibility of fog or injury to the negative.

WHY THE "FACTOR" VARIES WITH DIFFERENT DEVELOPERS.

The "factor" is the number which is employed to multiply the time which elapses between pouring on the developer to the first appearance of the image, to give the requisite time for total development. For example, suppose the factor was 10 and it took 30 seconds for the first high light to appear on the plate, at the end of five minutes (300 seconds) the plate would be fully developed. Now, if this factor remained the same for all developing agents, this system would be so wonderfully simple as to require hardly any explanation. Unfortunately, the multiplying factor is different for nearly every developer.

By a comparison of two popular developers I can easily show how this is so. We are led to suppose, by their action, that hydroquinone gives rather hard negatives with strong contrasts, while metol yields soft delicate negatives, in which the contrasts are not so pronounced. And so they do, if the time of development in each case is the same. If we develop two exactly similar exposures in hydroquinone and metol respectively, for, say, five minutes, we shall get a comparatively strong contrasting negative with the one, and a somewhat flat, weaker negative with the other. That is because their action upon the plate is

dissimilar. The hydroquinone piles density on the high lights very early on, while the detail in the low tones is very slow in putting in an appearance. Metol, on the other hand, works in an entirely opposite fashion, bringing up the detail at an early stage and producing very little density in the high lights until the shadow details are fully out. Consequently we are in the habit of using such a developer as hydroquinone for full and over-exposures, or where we require strong contrasts and metol for under-exposures, or negatives demanding the production of as much detail as possible without prolonged development. But Mr. Watkins conclusively proved that hydroquinone and metol, or any other two developers, would yield negatives capable of giving exactly similar prints, no matter whether the exposure was over, under, or correct. But to produce such negatives, the length of time they would require for development would vary very materially. Thus, a metol-developed plate would need to be in the solution very much longer than would a similarly exposed plate developed in hydroquinone, to acquire the same degree of contrast between high lights and shadows; yet the same contrasts certainly can be obtained if development is continued long enough.

Thus it comes about that the multiplying factors of the various developers vary considerably one from the other; but with the exception of pyrogalllic acid (which I shall refer to more fully later on), once the correct factor is ascertained, it remains in-

variably the same for that particular developing agent no matter what the strength of the alkali (accelerator) or the "reducer" may be. Suppose, for instance, we are using eikonogen with the normal quantity of potassium carbonate, and the image appears in thirty seconds, and correct contrast range is secured in $4\frac{1}{2}$ minutes; if, by reducing the proportion of carbonate, it takes a minute for the high lights to show, and the plate is left in the developer for nine minutes, we should get exactly the same range of contrast as in the other. Therefore, we find the factor for eikonogen is "9," because the time of appearance multiplied by nine gives us a negative of the best printing qualities the exposure it has received permits; for it must be borne in mind the timing system of development, no more than any other, can produce perfect negatives from faulty exposures; it can only get the best possible result out of them—whereas by the ordinary method of development one is apt to either over or under-develop, and so not get the best contrast scale the exposure was capable of yielding.

TABLE OF FACTORS.

Mr. Watkins, after lengthy experiments, has found the following factors to be the best for the various developers (reducers):

Developer.	Factor.
Hydroquinone	5
Adurol	5
Imogen sulphite	6
Glycin	7
Eikonogen	9

Ortol	10
Kachin	10
Pyrocatechin	10
Diogen	12
Amidol (2 grs. per oz.).....	18
Edinol	20
Metol	30
Rodinal	40
Diamidophenol	60

These factors may require to be modified slightly according to the subject. Where full contrast range is undesirable—say, for clouds and snowscapes—the factor number may be lowered; where greater contrasts are desired—as for copies of drawings—it may be raised. But the beginner should adhere to the above figures at first until he gets thoroughly acquainted with the system.

TIMING DEVELOPMENT WITH PYRO.

The one developer that does not possess a constant factor, and is not, therefore, amenable to the above rule, is pyrogallic acid. The density-giving properties of pyro-soda or pyro-potash depend, to a very great degree, upon the proportions of pyro and bromide (restrainer) in the solution. A developer containing a larger proportion of pyro and bromide, or either, will give much greater density with the same factor than will one weaker in pyro and bromide. Thus, the factor will depend upon the strength of the pyro in the solution on the one hand, and the quantity of bromide on the other. Mr. Watkins has tabulated some figures which will serve as a guide for determining the correct factor, but it is obvious that these are variable with different combinations of developer and restrainer:

Grains of pyro per oz.	Factor without bromide.	Grains of bromide per oz.	Factor with bromide.
1	18	$\frac{1}{4}$	9
2	12	$\frac{1}{2}$	5
3	10	$\frac{3}{4}$	$4\frac{1}{2}$
4	8	1	4

Example:—Using a developer containing only 1 gr. of pyro and alkali (quantity immaterial), the factor will be 18; with 2 grs. of pyro the factor is reduced to 12; and if we add $\frac{1}{2}$ gr. of restrainer it is further reduced to 5. It is necessary, therefore, when working from stock solutions of pyro and bromide, to know exactly how much there is of each in the ounce of made-up developer when adopting the factorial system.

A CONVENIENT PYRO-SODA FORMULA.

One of the most convenient factors for calculation purposes is 6, because we simply have to divide the time of appearance by 10 and read as minutes to find the total time of development. For example: Time of appearance 30 seconds; divide by 10=3 minutes. Or, time of appearance 45 seconds; divided by 10= $4\frac{1}{2}$ minutes for total development. A pyro-soda formula, containing bromide, having such a factor, has been worked out by Mr. Watkins. The pyro stock solution is made by dissolving $\frac{1}{4}$ oz. potassium metabisulphite in 4 ozs. of tepid water, and when cold pouring it into a 1-oz. bottle of pyro, and making the whole up to 9 ozs. with water, which is practically a 10 per cent. solution.

A

Pyro stock solution.....	$1\frac{1}{2}$ ozs.
Water to	20 ozs.

B

Sodium carbonate	1 oz.
Sodium sulphite	1 oz.
Potassium bromide	20 grs.
Water to	20 ozs.

For use, take equal parts of A and B. If the developer is too slow, the sodium carbonate in B solution may be increased to $1\frac{1}{2}$ ozs. (The quantity of alkali (accelerator), as before stated, makes no alteration in the factor.)

COMBINED DEVELOPERS.

When two developing agents possessing different factors are combined in one solution, the working factor will be the average of the two. The factor for development with metol alone, it will be observed, is a very long one (30), and many photographers prefer to combine it with hydroquinone, which has a short factor (5), in order to secure the necessary density in the high lights and detail in the shadows in a more reasonable time than would be the case were the metol used separately; while hydroquinone, with its short factor, will give a very thin negative (although the printing contrasts are the same as the longer-developed metol negative), which may be objectionable in some instances. If, therefore, we were to use 1 gr. of each—metol and hydroquinone—to the ounce of developer, we should have to add the two factors, 30 and 5, together, and divide by 2, to find the correct working factor ($17\frac{1}{2}$) for the combined developer. If we used three parts metol to two

parts hydroquinone, we should calculate thus:

Metol 30 plus 30 plus 30.....	90
Hydroquinone 5 plus 5.....	10

Total, for 5 parts.....100

Dividing by 5 (parts), we get 20 as the working factor for this mixture.

DEDUCTIONS DERIVED FROM THE FACTORIAL SYSTEM.

There is practically no difference in the power of one developer against another for building up density, searching out detail, and ultimate gradation. One may take much longer than another in arriving at that end, and the appearance of the negatives produced by the two, when compared, may appear very different; one negative may require longer time in the printing frame than the other; but the resulting prints will be the same.

The energy, or working speeds, vary enormously. Of two developers, producing first appearance of the same subject and exposure simultaneously, one may take three minutes to complete development, the other half an hour.

The same results may be obtained in a strong solution or a weak (diluted) one; therefore there can be no advantage, as affecting the printing qualities of the negative, by employing the "stand" method often advocated for under-exposure.

Varying the proportion of alkali (accelerator) does not affect the resulting image, except that an excess is liable to produce fog.

After the point at which the maximum density has been attained in the

highest lights, the building up of contrast ceases; and if development is continued further, contrasts are gradually reduced, in consequence of the next lower steps in density gradation acquiring maximum density.

Modifying the factor gives a measure of control of density contrasts; by increasing the factor of the particu-

lar developer in use, greater contrast is obtained; by lowering the factor (less time between "time of appearance" and "complete development"), we reduce contrast.

One of the greatest drawbacks of the timing system is that, after the image puts in an appearance, no modification of the developer can be made.

REASONS FOR REJECTION.

BY "FOUNTAIN PEN."

THE disgruntled ones, like the poor, are always with us, and the following which we clip from *The Amateur Photographer*, is as needful on this side as on the other.

About this time of year an agonized wail of disappointment arises heavenward from many a would-be exhibitor at the Salon. Forthwith he rushes off to the gallery, and explores the walls in an often vain attempt to discover the whys and wherefores that have prevented his pictures from finding a proud place there. Often, as I say, the search is vain, and the searcher returns home with his heart full of bitterness against the supposed unfairness or partisanship of the selection committee.

Stop, O searcher! Stop before you condemn the whole system, and inform your admiring relatives that it is a fraud and a delusion, and that you don't intend to patronize it again. Think a while. Have another, and a more impartial, look at the lucky

"hangs." Do they really tell you nothing?

You say your picture took you hours to compose, yet was rejected, while an obvious lucky snapshot of Craigton's is hung in one of the most conspicuous positions. But, first of all, is Craigton's picture a mere lucky chance snapshot? How can you be so sure about it? And, secondly, is it the judges' business to inquire how many hours, or how many minutes a picture took in the making? Surely, all they have to examine is the final result. Is the picture a good one, or is it a bad one? That is what they must ask themselves when they vote upon it. Furthermore, the fact that a picture took hours to procure is not necessarily an argument in its favor. Indeed, if it clearly shows, all over it, that it was laborious, and if from the purely photographic standpoint it is something of a miracle of patience or ingenuity, then I should suppose rather the opposite would be deducible. It is bad art because it

doesn't hide its art. Moreover, Craigton's hand-camera shot, which you revile by reason of its apparent luckiness, may, in that very luckiness, represent years of experience and practice, and a great deal of the finest artistic taste. If it doesn't then why do not other folks secure equally "lucky" shots? The answer is three-fold. Either they don't, because the shot isn't "lucky" at all, but deliberately thought out; or they can't, because they haven't the trained eye which sees the lucky shot when it offers itself; or they have obtained it, but fail to perceive its pictorial possibilities and merits—and, therefore, mightn't have obtained it at all, for all the good it is to them and to the world of picture-seers. I think we may safely conclude that Craigton's lucky snapshot represents more than we thought at first sight. It's not so facile as the tyro might imagine. When the tyro is as (photographically) old as Craigton, he may turn out things like that, and with the same ease; but meanwhile he must satisfy himself with the reflection that it isn't as simple as it looks. Of Whistler, a recent biographer writes:—"In his early portraits he required an enormous number of sittings from his models; yet a short time before his death he painted *in two sittings* a study of a girl's head, which in mastery of handling is equal to anything he ever produced." *Verbum sap.*

"Look here," says another Rejected, "I followed Mr. F. H. Evans' instructions in architectural photography to the letter, and submitted my

results. Yet I'm chucked, and he's hung. I've been to Ely, and the other cathedrals which he's immortalized, and I guarantee my photographs are indistinguishable from his."

Which is probably precisely why they weren't hung. The judges don't want imitations. The Salon is for pictures which "give evidence of personal artistic feeling and motive." Were your imitations of Evans overflowing with "personal artistic feeling"? Then they can't be very close imitations. The fact that they *were* close imitations proves conclusively that they did not come under the Linked Ring's definition of what they want. (All the same, I should doubt whether they're so indistinguishable from Evans' as you claim!)

"I'm sure my pictures were original," says another; "my friends said they've never seen anything the least like them—and there's nothing the least like them hung."

I dare say there isn't. But did they *mean* anything? Was their originality their sole claim to attention? Mere originality isn't necessarily art. There must be meaning, intention. Simply to do a photograph different from all other photographs isn't anything to be proud of. The Linked Ring, I venture to say, would any day be glad to stretch a point for real first-class originality; but not so far as to accept a thing which is original—and nothing more.

"Evidence of personal artistic feeling and motive"—after all, that covers the whole ground. Let Mr. Rejected "chew upon that."

A METHOD OF DETERMINING THE FOCAL LENGTH AND THE ABERRATIONS OF A PHOTOGRAPHIC OBJECTIVE.

BY REG. S. CLAY, D.Sc.

(From the Transactions of the Royal Photographic Society of Great Britain.)

While it is still true that photographers generally know less about their lenses than they should, we are glad to see that they are beginning to realize the importance of that knowledge, knowing as we do that the more they know the more they will desire to learn.

Two or three years ago we should have hesitated to occupy so much space with the following article, but we do so now with confidence, knowing that it will answer queries that are constantly coming to us, better than we could do.—Eds.

I wish to show, in the first place, how the focal length of a compound lens—for instance, a photographic objective—can be measured, not only accurately, but also easily, and with very simple apparatus, and at the same time to explain the *rationale* of the method. Secondly, I will show how the aberrations of an objective can be determined with the same apparatus. In connection with this I will suggest some *aberration coefficients*, which will give a numerical value to each. It seems to me that it will be of great advantage if the makers will mark these coefficients on the lenses in the same way that they now mark the “numerical aperture” on the best micro-objectives. One frequently has to procure a lens for a specific purpose for which freedom from certain aberrations is of great importance, while its behavior in other respects is of comparatively small account. In landscape work, curvature of field is generally immaterial and may even be helpful, by assisting to bring the foreground into focus; in copying line engravings, on the other hand, a lens with a flat field is essential. For portraiture some amount of spherical aberration is frequently desired, but the lens should be well corrected for color, and work at a large aperture. For process work it need not have a large aperture, as to obtain a correctly graduated dot it has to be stopped down to $f/22$, and at the larger aperture (used to close up the dots in the high lights) a slight falling off in definition is un-

important. In this case the lenses should be thin and have few surfaces in order that the losses from absorption and reflection may be reduced to a minimum. Many other instances will occur to every one, and it is obvious that if the amount of the aberrations be known, it may often be possible to substitute a cheaper lens, and still do work as good as or better than with a more expensive instrument.

FOCAL LENGTH.

There are certain very important fixed points in any given lens, called, after the man who first investigated them, the *Gauss points*. These are the focal, principal and nodal points. When light, from an infinitely distant point, passes through a lens along its axis, it converges to a point on its axis called a principal focus, or the first focal point. If the lens be reversed so that the light passes through it in the opposite direction it converges to a point as before, called the second focal point.

For one position of the object, and only one, the image formed by the lens will be the same size and erect, then the object and image are situated respectively in the *principal planes* and these cut the axis of the lens in the *principal points*. The planes nearly coincide at about the diaphragm in the ordinary photographic lens, but are a long way off in the telephoto lens.

There are two other points which have a very curious property. When a ray of light falls on the lens, travelling in such a direction that if it had not been bent by the lens, it would pass through one of these points, then after passing through the lens it will emerge in such a direction that it seems to come from the other of these points. These

are the *nodal points*. When the lens is working in air these will always coincide with the principal points. (The nodal points of a water or oil-immersion micro-objective do not coincide with the principal points.)

FIG. 1.*—HOME-MADE TURNTABLE OF WOOD.

The upper board carrying the V's rotates upon the lower round a pivot A, which can be inserted in any of the holes C.

I will now demonstrate this property of the nodal points. The light from a lamp at one end of the room is focussed by a large lens upon a screen. The lens is mounted upon a board (Fig. 1) rotating upon a lower board, round a vertical axis, formed by inserting a pin through the two boards. There is a series of these holes in a line along the middle of the boards. When the pin is inserted in a hole at the end furthest from the screen, the image moves to and fro as the lens is rotated, going to the right when the lens is rotated clockwise. When the pin is transferred to the hole in the board nearest the screen, the image again moves when the lens is rotated, but in the opposite direction, namely, to the left, when the lens is rotated clockwise. Lastly, when the pin is placed in a certain hole near the middle of the board, the image remains stationary as the lens is rotated. This will be the nodal point, if the lamp used as the image is infinitely distant.

The explanation of these movements is clearly shown by means of a movable cardboard model. The *direction* of the ray from the distant lamp to the first nodal point, represented by a long stretched string $A\pi 1$ (Figs. 2 and 3) is practically unaffected by

FIG. 2.—CARDBOARD MODEL OF LENS.

$\pi 1$ $\pi 2$ nodal points; C pivot; A $\pi 1$ incident ray; $\pi 2$ B emergent ray.

the movement of the lens; so that the emergent ray from the second nodal point $\pi 2$ B, which, by the peculiar property of these points, remains *parallel* to the incident one $A\pi 1$, will move to and fro with the point $\pi 2$. When therefore the lens is pivoted

FIG. 3.—THE MODEL ROTATED ABOUT C, CLOCKWISE.

The ray $\pi 2$ B has moved parallel to itself with $\pi 2$, so therefore has the image B.

at a point C, the image will move to the right (as one faces the screen) when the lens is rotated clockwise. When the pivot is transferred to D, the image will move to the left. Lastly, if the pivot is at $\pi 2$ (supposing the lamp to be sufficiently distant), the image will be unaffected by the rotation of the lens.

The distance from $\pi 2$ to the screen will then be the focal length of the lens if the incident light come from infinity.

As the focal point is the point to which parallel light will converge, it follows conversely that light starting from this point, and traversing the lens in the reverse direction, will emerge as a parallel beam. Let this beam of light fall normally upon a plane mirror M (Fig. 4); then it is obvious that each ray will be returned upon itself,

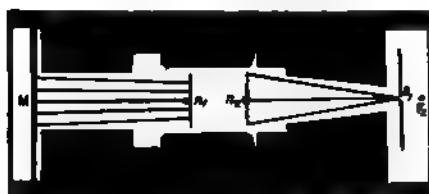
and after passing a second time through the lens, will converge again to F_2 .

I can show this by passing the light from an arc lamp S , through a small hole, furnished with crosswires, in a screen at F_2 . The light, after passing through the lens, is

FIG. 4.—LIGHT FROM PRINCIPAL FOCUS, F_2 , EMERGING AS A PARALLEL BEAM, REFLECTED BACK BY MIRROR, M , AND RECONVERGED TO F_2 .

reflected back by the mirror and by tilting the mirror a very little, the image is deflected to one side of the hole, and can thus be observed. The distance is adjusted until the image of the crosswires is perfectly sharp, and then F_2 is exactly at the principal focus of the lens.

The accuracy with which this adjustment can be made is at least twice as great as it will be when a distant object is used. For, supposing the screen be moved to S_1 (Fig. 5) a short distance in front of F_2 , then the emergent rays will be slightly diverging,



The emergent rays are divergent.

FIG. 5.—COURSE OF RAYS INCIDENT UPON THE MIRROR M WHEN THE APERTURE S IS NEARER THE LENS THAN ITS PRINCIPAL FOCUS, F_2 .

and after reflection at M , will fall upon the lens as a diverging beam (Fig. 6), and will be focussed by the lens at a point S_2 behind F_2 . It can easily be shown that if the dis-

placement be small, S_2 is about the same distance behind F_2 , that S_1 is in front of F_2 . Thus the image will be out of focus on the screen (which is now at S_1) by the distance from S_1 to S_2 , that is, by *twice* the amount the screen has been displaced.

Returning to the cardboard model, it will be seen that, with the mirror in position, a rotation of the lens about any other point than n_2 , will displace the image; and that in this case also the displacement will be twice as great as when using a distant object, and therefore the position of n_2 can be found with twice the accuracy.

For when the lens is rotated about a point other than n_2 , such as C (Figs 7 and 8) the ray F_2n_2 is altered in direction by the motion of n_2 , and therefore the emergent

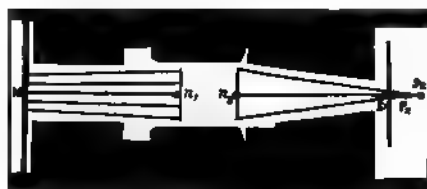


FIG. 6.—COURSE OF RAYS AFTER REFLECTION IN THE MIRROR, M .

The divergent bundle has been reflected as a divergent one, and this focuses at S_2 behind the principal focus F_2 , parallel bundle is altered in direction. This bundle, after reflection, will again enter the lens, inclined at the same angle to the normal, and will emerge from n_2 along a paral-

FIG. 7.—COURSE OF RAYS FROM F_2 TO THE MIRROR, M , WHEN THE LENS HAS BEEN ROTATED ABOUT C .

lel line n_2P . Thus F_2n_2P is practically an isosceles triangle, and F_2P is double the distance which n_2 has been displaced.

FIG. 8.—DIRECTION OF RAYS AFTER REFLECTION IN THE MIRROR M.

The image of F₂ is at P. The displacement, F₂ P is twice the displacement of n₂.

But when the rotation takes place about n₂, as the direction of the ray F₂n₂ is unchanged, the parallel bundle strikes M normally, for all positions of the lens, and returns without deviation, so that the image is fixed.

By measuring the distance from n₂ (the pivot) to F₂ (the screen), the focal length is at once found.

This can be demonstrated by means of the large lens, which having adjusted the distances to obtain a distinct and stationary image, shows a focal length of 31.15-16 inches.

THE ABERRATIONS OF LENSES.

Spherical Aberration.—I will now show how the apparatus may be used, in a very simple manner, to measure the spherical aberration of a lens. When a beam of parallel light passes through a lens, the tendency of the lens is to focus those rays which enter the lens near its periphery, at a shorter distance than it focusses the axial rays. This defect is termed "spherical aberration."

I insert a small stop and focus the crosswires. The stop is then removed, a circular black card, of which the diameter is a little less than that of the emergent beam, is placed over the mirror and the screen is again focussed. The difference in focal length (i. e., the distance between the two positions of the screen), in the case of the lens before us is $\frac{1}{4}$ inch.* That is the measure of the aberration of this particular lens at this particular aperture ($f/4$).

*The lens was purposely adjusted to increase the error so that it might be easily seen.

Petzval showed that the aberration varies with the square of the aperture, and with

TURNABLE TO TAKE ANY LENS.

The lens rests on two V's, adjustable horizontally and vertically respectively. The V's are attached to a carriage, which slides on two steel bars of a cradle; the latter rotates about a vertical axis.

the focal length. Thus the aplanatic coefficient can be defined by $A = \frac{s}{f} \frac{n^2}{f}$; where s is the above difference between the focal lengths of axial and marginal rays, and n is the "f number." As this lens is of nearly 32 inches focus and is working at $f/4$,

$$A = \frac{\frac{1}{4} \cdot 4^2}{32} = 1 = 125$$

The coefficient, as defined above, will be the same for lenses with varying focal length, and working at any intensity, if they are equally well corrected.

Astigmatism.—When light passes very obliquely through a lens, radial and transverse lines are focussed at different distances. This effect is called "astigmatism." Having explained the error by means of a diagram, I will show that it can easily be measured with this apparatus. A piece of thin zinc, in which horizontal and vertical slits have been cut, is substituted for the slanting crosswires. The lens is turned through a large angle, so that its axis produced would meet the screen at the point P, distant r from the slits. The screen is adjusted until the image of the vertical slit is

sharply focussed, and its position noted. It is then adjusted until the horizontal slit is sharp. The distance t , between the two positions of the screen, measures the astigmatism of the lens, at that particular obliquity. The astigmatism varies as the square of the obliquity, and directly as the focal length. Thus to define the coefficient put.

$$\text{Astigmatic coefficient} = T = f \frac{t}{r^2}$$

In this case t is $\frac{1}{4}$ inch, and r is 10 inches.

$$\text{Thus } T \text{ is } \frac{32 \times \frac{1}{4}}{8^2} = \frac{8}{100} = .08.$$

T , thus defined, is a true coefficient, for it has no "dimensions," and will, for instance, be the same for a series of lenses accurately constructed to the same formula, but of different focal lengths. It will be the same if the measurements are in inches or in centimetres (they must be all in inches, or all in centimetres, of course).

Curvature of Field.—Placing the lens once more with its axis normal to the screen and focussing the crosswires, a rotation of the mirror causes the image to travel across the screen. As the light falling on the mirror, and, therefore, also the light returned by it, is parallel, the image is always that of an infinitely distant object. Thus, if the lens have a flat field, the image should remain sharply in focus right across the field. It does not remain, however, sharply in focus, and at a certain distance r from the centre, the screen has to be moved $\frac{3}{8}$ inch before it comes into focus (the crosswires being at 45° with the horizon, not horizontal and vertical, to avoid difficulties due to astigma-

tism). Let the distance the screen is moved be k . r was measured and found to be 8 inches. Then the curvature coefficient can be defined thus,

$$\text{Curvature coefficient} = K = \frac{f k}{r^2}$$

$$\text{In this case } K \text{ is } \frac{32 \times \frac{3}{8}}{8^2} = \frac{3}{16} = .18.$$

It would point out, however, that as flatness of field is only of importance in copying, it will be fairer to the lens to measure the coefficient for "copying the same size," than for parallel light.

Chromatic Coefficient.—By inserting behind the aperture in the screen colored solutions (iron sulpho-cyanate and ammoniate copper sulphate, for red and blue, respectively) the chromatic aberration can be meas-

ured. The coefficient is $C = \frac{e}{f}$ where e is the difference in focal length for the two colors.

The lecturer invited those present to test the apparatus, and said that he believed this method of finding the focal length was original. The turntable for finding the nodal points was old, and the mirror for finding the focal length of a thin lens was well known, but the obvious combination of the two for a compound lens did not seem to have struck anyone. He hit upon the method in 1900, in attempting to work out for a student a question set at a university practical examination, although, as the examiners had not provided a turntable, it was not the solution they had intended.

EXHIBITION OF AMATEUR PHOTOGRAPHY UNDER THE AUSPICES OF THE ALBANY, N. Y. CHAMBER OF COMMERCE.

The Albany Chamber of Commerce, with the laudable desire to show the pictorial possibilities of their City, and how well the amateur photographer was able to reproduce them, arranged for the exhibition of which notice was given on page 411 of our

September number; the result being partly detailed in the following notice which we clip from the *Argus*, and partly seen from the half-tone engravings of a few of the prize prints which we are able to reproduce through the courtesy of Mr. W. B. Jones,

Photo by Augustus Pruyn.
CATHEDRAL OF THE IMMACULATE CONCEPTION.
From Group Winning Special Prize "A."

Photo by Emmett Terrell
VIEW IN WASHINGTON PARK.
Winner of Special Prize "C."

the Secretary. As he says in the letter that accompanies the blocks, it is certainly a novel idea for a Chamber of Commerce to carry on a photographic exhibition, and one that has evoked considerable comment not only in Albany but all over the United

the rooms of the Chamber of Commerce is attracting large numbers of visitors there daily. The exhibit is of more than passing interest, since among the pictures are some of really wonderful development, and they are all the work of local amateurs.

Photo by William C. Miller.

ST. PETER'S CHURCH

From Group Winning First Grand Prize.

States; but the over 150 prints on exhibition show unmistakably that which they wanted to bring out; the wealth of pictorial matter in and around the city, and the presence of amateurs able to take full advantage of it.

The exhibit of amateur photography at

A group of pictures which is attracting considerable attention is that which contains a copper print of St. Peter's church, mounted on cream-colored parchment paper. The picture displays a wonderful cloud effect, and it seems incredible that it is the work of a camera, handled by an amateur.

The group contains besides, a view of St. Peter's, with the altar in the background, and a like view of another church. There is a copper print also of a scene in Washington Park. The picture is all simplicity. Two great elms stand on the side of a small knoll, and there is shrubbery in the background, a grassy undulation forming the foreground. There is a dark carbon print

are multi-limbed willows shading the high bank, and beneath them are seated a girl and a young man—lovers, perhaps. The water in the lake is calm, the atmosphere clear, and everything is peaceful and beautiful. The picture is a study. There is a view on the roadway looking west past the bridge on the south side of the lake. A picture that might be entitled "Beauty Un-

Photo by W. S. Ludden, Schenectady, N. Y.

THE CAPITOL.

From Group Winning Special Prize "B."

on a plain mount of the King fountain nestled in the background, among its surrounding verdure of flower beds, shrubbery and trees. The picture is a remarkable one. The group includes three other pictures. They are views of the lake in Washington Park, taking in the fountain and lily beds at the lower end, and two interior views of homes

Another group, mounted on parchment, commands the admiration of visitors. It is a scene in Washington Park, showing the north bank of the lake, just west of the bridge. The path on the terrace is in the foreground, stretching away to its hiding place among some shrubbery. There

adorned" is the one of a young lady, in plain, simple dress, standing beneath a big, birch tree. She leans toward the trunk. In the background are evergreens. The place is located on the south bank of the lake in Washington Park. The group contains fine photographs also of the Burns monument, the Capitol, and two interior views of the Cathedral of the Immaculate Conception.

A interesting group of pictures is that which contains views of the park lake west, including the lake house; a picture of the Dudley observatory, with a fine cloud effect; Englewood place, the driveway up the ravine in Beaver Park, a picture taken

while the ice is breaking up in the Hudson beneath the Greenbush bridge and a scene in Washington Park.

One group which attracts a good deal of attention is that which contains a scene on the market square during market time. There is a jam of wagons, horses, vegetables and men and women. The picture is a great study. A thing which characterizes this group of pictures is the lack of cloud effect. There is a picture of the Dudley observatory, which forms a great contrast to the identically same subject in the picture of the other group just mentioned, in which the cloud effect is beautifully brought out. The group contains plain prints of the interior of All Saints' Cathedral, the King fountain, the Albany Savings and National Commercial banks.

Another group contains a beautiful picture of the main walk in Washington Park, which lies between Northern boulevard and Knox street; the King fountain, Western avenue above Quail street, the lake in Washington Park looking west to the bridge, the lake looking eastward towards the lower end, and a fine print of a portion of the railroad shops at West Albany.

Still another group contains pictures of churches in Pine Hills, there being two photographs of the Memorial Baptist church, one of the Madison Avenue Presbyterian church, and one of the First Church of Christ, Scientist, besides a picture of the Dudley observatory. There is a group comprised of six scenes taken in Washington Park, and another consisting of interior views of churches.

Just as we go to press we learn that the prizes have been awarded as follows: First grand prize for best group of six pictures, Wm. C. Miller; Second grand prize, Henry Popp. Honorable mention, Walter W. Stein, Oscar A. Meyer, L. F. Cummings. Special prize A, for best interior, Augustus Pruyne; honorable mention, Charles Craig. Special prize B, for best exterior of church or public building, W. S. Ludden; honorable mention, Hallie G. Bartlett. Special prize C, for best view in Washington Park, Emmet Terrell; honorable mention, Henry Popp, Wm. C. Miller. Special prize D, for best picture by amateur under 16 years, Ina C. Speed, honorable mention, Grace I. Ludden.

OUR PORTFOLIO.

Prints for criticism; only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1831, F. H. SMITH.—“What Next?” a litter of puppies eight in number, and literally “wooly dogs.” They are in and around the kennel, the door of which makes a dead black background which just a little too hardly contrasts with the white hair or, rather, which it is much more like, the wool. In such a subject there is, of course, nothing pictorially to criticise; but its study should be a lesson to those who have children to photograph, teaching them the advantage of allowing them to pose themselves. It also shows the fact that, in spite of the declara-

tion to the contrary, neither dogs nor children are all born alike, the various expressions showing unmistakably that they will grow up with different tempers. It is evidently a happy family and an excellent photograph. The print shall be returned as requested when the engraver has done with it.

1832. S. A. SMALL.—“Portrait.” This print is from an overexposed and badly lighted negative, which has been made all the worse by a retouching that has re-

an old chest of drawers and a part of a reel, the companion of the spinning wheel, although that brings memories of the long long ago to the few that are left who remember the time when both were in very general use. The photography is only fairly good, mainly because of a too short exposure and a too prolonged development. Before trying interiors you should get a much wider angle lens and give sufficient exposure to secure something like true values. The shadows here are simply blackened paper.

1834. M. A. YAUCH.—"The Letter Carrier," evidently a friend of the little dog that comes to meet him as he ascends the stair on his delivery route. Like too many of such prints that come to us, this suffers from serious underexposure, everything not in direct light being simply black. With sufficient exposure it would have been a pretty bit of *genre*, while as it is it is simply a waste of good material.

moved whatever texture there may have been in it. The tone throughout is an unsatisfactory grey without a pleasing contrast; and the expression is so thoroughly "wooden" as to be more like a photograph of a lay figure than a living model. Portraiture is one of the highest phases of photography and we congratulate you on the effort, but it requires much more study than you have yet given it; and we recommend you to abandon all idea of retouching till you can make portraits that do not need it, and then you will not want to spoil your work with it. One thing needful is a suitable model, and that you can get only by training, but it is well worth all the trouble that it takes. We shall be glad to see examples of your work further on.

1833. F. M. CASE.—"Granny's Garret." The title is suggestive of much but the print shows little. From the use of a too narrow angle lens instead of the Garret with its wealth of things of the past as one would naturally suppose, there is only

1835. F. SOLOMON.—"Piney Woods" hardly bears out the title. The "woods" are a few young trees the only interest in which being the winding way or path

through them. There is the setting for a picture the only thing wanted being the object of interest, there being nothing of more importance than another, nothing to suggest a thought or to induce us to look at it a second time. And yet such little things, or "bits" as they are generally called, have their use; being pretty in themselves and of value to the painter artist. We do not know whether we have mentioned it before but it can do no harm to do it now, and so we say that just such scraps or little bits of photographs one of Britain's most popular and most successful artists, his forte being rugged mountain scenery, has often said that the first cause, the inception, the something that started something else that changed the grocer's message boy into the world-wide known artist was the getting of just such scraps. We then confined ourselves to plates 9x11, had the camera made that size because we could get four prints out of a sheet of paper; and our aim, knowing nothing better, was "record of fact." Worthless as such prints were from an art point of view, there were often little bits that were useful as studies and we were in the habit of cutting such out and having them lying about in our then place of business. The grocer's message boy was a

frequent visitor in his business capacity, and being good above the average of such boys was allowed to take such scraps as he fancied, with the aforesaid result.

1836. D. N. CARLIN.—"Waiting for a Cargo," a small schooner at the pier of a small village, is photographed just as we like to see it except in the matter of placing. Three inches and a quarter of sky about an inch of landscape is rather an over allowance. Of course you did it to include the top of the tallest mast, but there could have been no objection to leaving an inch or so of it to the imagination. This misplacing is all the more regrettable because there is evidence that below the boat, just where the additional foreground should have been, there are shadows such as very much enhance the beauty of such scenes.

1837. A. WILLIAMS, (Toronto). The nameless print is of a well selected and well arranged subject that might have been made a fine little picture, but instead is made simply worthless from under-exposure and consequent over-development. Surely you must see that neither sky nor water can properly be represented by white paper as they are here. As soon as you have learned to expose and develop so as to get sky and water in something like true tones we shall be glad to hear from you again, as one who can make such fine selections as this should not rest till he has acquired a knowledge of technique sufficient to secure something like true values.

there is a lack of contrast in the print showing a too short development of the negative, and the foreground an uninteresting piece of water, that could have been spared with advantage. Five-eighths taken from it and given to the sky would have been a great improvement, and that trimmed from the print now improves it much

1840. EDWIN O. TORBOHM. "?" The title which our correspondent has given to the picture would have been more applicable at an earlier period of the year, a corn field in the "shuck" with a figure, presumably the farmer, leisurely leaning over a fence and examining it, being the objective feature of the subject. Had he been wistfully regarding the corn just breaking through the ground and wondering how the crop would turn out, the query might have been applicable but as it is ready to husk the question is already solved.

It is a 13x11 enlargement on bromide paper sepia toned, and from a 4x5 negative; without seeing which we can hardly say how far the enlarging has been a success. The principal characteristic of the enlargement is a tendency to flatness, a shortening of gradation at the higher end, or lack of the higher lights; probably aris-

1838. W. H. BLACAR.—We do not like the unnamed print although in many ways it is a good photograph. In the first place, there is no objective point, no one object of more importance than another, and the foreground feels as if too small for the large mass of trees, feels as if they needed greater support below. Then, from the way in which the view was lighted there are points of high light scattered all over the print as if from a pepper box, every point of light that should have been less than a half light having been developed up to opacity. Reduction with ammonium persulphate, just sufficient to reduce the scattered high lights to half lights might make a wonderful improvement.

1839. W. J. MCGUFFY.—The more we look at the little unnamed photograph the better we like it although it is far from faultless. The little girl in a single garment stands in the water regarding the scgs or reeds or whatever they may be, as if studying some problem, and both attitude and expression are charming. That she is thinking is evident, and equally evident is the fact, however unusual, that she is unconscious of being photographed. But

ing from a too short exposure in the enlarging camera, or it may be over-development; the effect being that the picture looks like having only one plane and that an inclined one. Nor are we satisfied with the placing of the subject, the foreground not being sufficiently interesting to occupy so much space; and the removal of two and a half inches, in our opinion, being a decided improvement.

Such of the atmosphere as there is between the eye and the distant hills is effective, but there is room for more and more would materially add to its beauty. Some useful hints on enlarging may be found in the leading article in our July, 1904 number.

1841. JOHN ROESCHLAU.—"Edge of the Cliff," three figures sitting under a great rock with apparently at their feet a lot of toy houses scattered like bricks that a child had been playing with, has both good and bad qualities. It is an example of good photography except that development has been pushed till what should have been sky is simply white paper; on a badly arranged subject. The three figures are seated in a row with their heads in a line straight as a mechanical drawing, and the white, instead of being contrasted by placing between the two blacks is at one end. The appearance of the houses is a puzzle. They doubtless represent a village at some distance, but whether from the employment of an unsuitable lens or some other cause, they look more like the toys mentioned and

at the feet of the figures. While nothing could improve the faulty seating of the figures, the only way to make the photograph at its best is to cut it down to three inches by two and so have three excellent portraits without any disturbing and objectionable matter.

1842. S. W. RICKER, JR.—"Sunshine and Shadow." We are glad that you send this, about the most worthless print that ever came to the Portfolio, because it gives us the opportunity of saying something that if you are made of the right stuff will do you good. The print shows neither sunshine nor shadow, nothing in fact but white and black paper; with a trace of tone or texture. Very great under-exposure and nearly as great over-development are the causes, and you will never be a photographer worthy of the name till you have learned how to expose properly, and then to develop to just enough. The subject and arrangement are good but don't let the model stare at you or the camera when photographing it. Let her look at something else or be doing something, never standing still and stiff as she is here. Such a miserable photograph is worse than a waste of good material because it misleads you to the extent of thinking it worth criticism, but you should look at some of the prints that we reproduce, and not be satisfied till you can make something as good.

From THE CENTURY CAMERA Co., Rochester, N. Y., comes a circular describing the Rochester Studio Outfit and the announcement that the Century Camera Co. have installed a department for the manufacture of portrait cameras, stands and other studio apparatus for the professional photographer. It is needless to say that the same high standard of quality which has made their hand cameras so popular is also noticeable in their new line, and the profession would do well to get in touch with this enterprising firm, as several new and improved pieces of professional apparatus are promised in the near future.

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

Camera Club of New York.

The regular meeting of the Club was held on Tuesday evening, October 11. President Frederic E. Ives, after the routine business was completed, explained a new method of making

TRICHROMATIC LANTERN SLIDES which exhibit the picture in the colors of nature when projected on the screen. He called it a compromise process, because it combined certain features of the halftone screen process with pure photography, not with a view to improving the results, but in order to make it possible to manufacture such colored lantern slides for sale at a price to compete with hand coloring. He first showed some slides made in 1891, by his original process employing gelatine coated celluloid films, and then, in order to show that the same coloring could be obtained with prints made directly on glass by printing from halftone process negatives, he showed a photomicrographic enlargement of a portion of a halftone trichromatic print, and blended the colors into smooth tints by throwing it out of focus on the screen, also pointing out that it would only be necessary to make the line and dot structure sufficiently fine in order to obtain the optical effect of such continuous shading without throwing the image out of focus. In the new process, the peacock blue print was made with smooth shading, in the manner originally proposed by him in "A New Principle in Heliochromy," in 1889, but the crimson and yellow prints were made from halftone process negatives, in bichromated fish glue, by a very quick and simple process.

Commencing with a trichromatic negative made in one of his one-plate-one-exposure cameras, he made an ordinary "blue print" in gelatine on glass from the image made through the red screen. From the

images made through the green and blue screens he made halftone process negatives, 200 lines to the inch, and from these made prints in bichromated fish glue, by exposing a few seconds in sunlight and then washing for a few seconds in cold water, after which they were colored by immersion in crimson and yellow dye solutions. The yellow print was made directly upon the surface of the blue print, after the latter had been protected by a waterproof varnish, and the crimson print upon another glass, which became the cover glass of the finished lantern slide. The coating of bichromated fish glue was spread and dried in a "whirler," making it very thin and even, and as the prints were developed from the face (unlike carbon prints), and development was complete in from 10 to 30 seconds, the process was a very quick and reliable one. The films being all attached to glass, there was no danger of injury by the heat of the lantern, which was one of the objections to the process in which celluloid films were used. It was also unnecessary to seal with balsam, if a suitable varnish was used, thus eliminating another objectionable feature of the older process.

Mr. Ives pointed out that a process requiring the production of two halftone process negatives, and one of them "reversed," in addition to the original trichromatic negative, before commencing to make the color prints, was not only not a process for amateurs, but was not even adapted to the economical production of a single slide of any subject. It was only suitable for the regular manufacture in quantity, of stock subjects.

Considering the effect of the halftone screen structure on the quality of the slide, it was pointed out that it was much less in evidence than it would be if the blue print were also made in that way, and that

it was not likely to be discovered by anybody who was not looking for it, unless they were very close to the lantern screen. The lines of a Macdonough slide shown for comparison were painfully in evidence at a distance from which no structure was noticeable in the new slides. Another important difference was the fact that Mr. Ives' slides required no more light than the best hand colored ones, while the Macdonough slides required at least three times as much.

Mr. Ives regarded the new method as a practical commercial process for the production of colored lantern slides. He exhibited one colored slide of a farm scene, having much green foliage, brilliantly sunlit, the triple negative of which he said was made with a new camera, in one second.

After his remarks the interchange sets of the Minneapolis and Chicago clubs were exhibited, when the meeting broke up.

On November 9th, Dwight L. Elmendorf is to give an illustrated lecture on "New York to Algiers" at the Carnegie Lyceum for the benefit of the club.

Buffalo Camera Club.

BUFFALO CAMERA CLUB. At the annual meeting of the club held in October, the following officers were chosen:

President, W. H. Porterfield; Vice-President, Edward B. Sides; Treasurer, Charles A. Georger; Secretary, Samuel S. Lloyd. Mr. John P. Zenner was chosen as Lantern Slide Director to represent the club in the American Lantern Slide Interchange.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol, Tioga Centre, N. Y.

THE AMBASSADOR, a quarterly, published by the Niagara Paper Mills, the cover papers of which we have often spoken in terms of highest praise. The object of this beautifully got up little magazine we hardly see, unless it be to show specimens of very high-class taste in the arrangement of paper printing and decoration. A postal to lower-Town of Lockport, N. Y., will bring it, and it is an education to printers or those who have printing to do.

* * *

THE PHOTO-MINIATURE, No. 64.—Figure Composition, the subject of this number, is probably the most interesting and the most needed by both professional and amateur, not, as are many of the subjects that have gone before, to be referred to from time to time, but as a continual help in their daily practice. The author, who has done his work remarkably well, draws on both photographers and painters for his well chosen

illustrations; and while it is simple enough for the beginner it goes deep enough to give additional light to the most experienced portraiturest.

* * *

THE BAUSCH & LOMB OPTICAL COMPANY send two catalogues, the "Semi-Centennial," and the "Portrait," and both are well worth the attention of all who use lenses. The "Semi-Centennial" may be said to be a general illustrated price-list of the various specialties made in probably the largest and best equipped optical factory in the world, and where everything optical and some things outside of optics that a photographer can require is turned out with the highest possible degree of manual and mechanical skill. But it is to the "Portrait Catalogue" that we desire to call special attention; as it contains for the first time in any catalogue a number of important improvements both optical and mechanical, including a

portrait lens with the wonderful rapidity of $f/2.2$; four times as fast as the universally used portrait lens employed at its fastest, and sixteen times as fast as it is generally wrought.

For the first time, too, in any catalogue that we have seen attention is called to the desirability for using lenses of long enough focus to secure a perspective that appears correct, sixteen inches for example being recommended for portraits of "Cabinet" size. Two other improvements we may also notice, a system of separation of the elements of the back lens for diffusion and a focussing rod by which even with the larger cameras, the lens may be focussed while watching the image on the ground glass, two great advantages that cannot fail to be highly appreciated. For the first time also, there is a most useful table, copied from one of our earlier numbers, giving the minimum length of studio for a given lens, and, of course, *vice versa*.

Our readers know that time and again we have mourned over the persistence with which this leading firm of the world has stuck to the almost everywhere else abandoned so-called U. S. method of stop marking, meaningless until learned and then more easily forgotten than learned; instead of what is both natural and scientific, the f/x or fractional method, every marking of which speaks for itself as plainly as the name of the ship on the cap of the sailor. It would indeed have seemed absurd when a buyer of the new lens asked where was the indication of $f/2.2$ on its mount, or how to know to set the iris diaphragm to that aperture, to be told that the unit of the U. S. system was $f/4$, and the desired $f/2.2$ could only be indicated by a dot followed by certain fractions. We are therefore glad that, as they say, "We have rated all our portrait lenses after the f system, because this represents the absolute photographic value of a lens. The value of a lens is computed by dividing the focal length of the lens by the working aperture, and any given f value is the same for any photographic lens, provided

its speed is not interfered with by the color or other physical properties of the glass of which it is made." Let us hope that when the next catalogue appears the f system will be applied to all their lenses.

* * *

WITH THE CAMERA.—The news from the Illinois College of Photography this month deals mainly with the meeting of former students at the Convention in St. Louis; and of the almost universal success of former students all over the country both as employers and employed. It tells also of the attempt a couple years ago to form a National Union of Photo-Engravers and of its failure for various causes; to such an extent indeed that of 95 cities having engraving plants only 38 have stuck to the closed shop, leaving 57 in the open state, or as the circular has it, "vigorously non-union;" and the eagerness with which the students from the engraving department of the college are being sought after shows how the teaching there is being appreciated.

* * *

A NEW COOKE LENS.—If our readers will turn to page 205, the May number of our 1903 volume, they will find an illustrated article dealing with the anastigmat lens in general and with the Cooke lens in particular, it will save us from going over the same ground, although the great success that the latter has achieved during the eighteen months that the agency has been established in this country might warrant us in speaking of it, if possible, in higher terms.

* * *

From the agency, or perhaps more appropriately, the branch office of Taylor, Taylor and Hobson at St. James Building, Broadway and 26th Street, comes a circular telling of the introduction of two new lenses with working apertures of $f/5.6$ and $f/4.5$, designed for high speed photography in general and for the finest portraiture in particular. For those who continue to want the most perfect definition, and that equally all over the plate, those lenses are

pre-eminently suitable, and two of them at least, are furnished with arrangements by which the elements of the back lens may be separated so as to give just the desired degree of diffusion.

Photographers who may be looking for a lens, or who are not altogether satisfied with the lens they have cannot do better than to send to the address already given, either for information or trial, and they will indeed be hard to please if they cannot get a "Cooke" that will give perfect satisfaction.

* * *

MESSRS. FOLMER & SCHWING, 407 Broome street, New York, send us a new catalogue of their famed graphic and graflex cameras. In addition to the full line of cameras and accessories the catalogue contains several devices which are original and especially adapted for scientific work. Folmer's x-ray table is now used in the most advanced clinics and the x-ray reflecting stereoscope and laboratory tilting stand only need to be seen to be appreciated by specialists. This firm is open for the designing and construction of special apparatus for any kind of photographic research, and their catalogue should be in the hands of all who desire to use the most thoroughly constructed photographic apparatus in their practice.

* * *

CAMERA WORK.—Mr. Stieglitz, still detained in London by sickness in his family, writes to say that although the number of *Camera Work*, due in October, is almost ready, he is unwilling to let it go without his personal supervision, which he hopes to give it within a week or two. It will be largely devoted to the work of the well-known J. Craig Annan, and so of the greatest possible interest to the picture maker and picture lover by photography.

Convention of P. A. of A.

The twenty-fourth annual convention of the Photographers' Association of America was held in St. Louis October 3d to 8th. There was a large attendance, no

doubt due to the proximity of the World's Fair. Forest Park University Hotel, which had been secured for the event, was ill adapted to the needs of a convention, and the hotel management did not exert themselves to be accommodating. Interesting addresses were delivered by Prof. Griffith, Abraham Bogardus, on "Fifty Years a Photographer"; Milton Waide, on "The One Man Method"; F. M. Steadman, on "Principles of Lighting and Scientific Development"; Prof. Bement, on "Art Principles in Photography," and W. C. South, on "Color Photography."

The officers elected for 1905 were: President, G. G. Holloway, Terre Haute, Ind.; first vice-president, C. J. Van Deventer, Decatur, Ill.; second vice-president, A. T. Proctor, Huntington, W. Va.; secretary, J. M. Bandtel, Milwaukee, Wis.; treasurer, F. R. Barrows, Boston, Mass.

The convention was well supported by the manufacturers, all the available space being taken. Owing to the cramped space and scattered arrangement of the booths the amount of business done was disappointing, and it was with joy that the manufacturers and dealers hailed the announcement that Boston, with its magnificent Convention Hall, had been selected for 1905.

Many new and good things were shown which we have not space to notice here, but will refer to at length again.

THE ROTOGRAPH COMPANY showed a magnificent display of their new carbon tissue papers at the recent Photographers' Convention. Their windows were screened with carbon transparencies in all colors and the walls decorated with prints in single and double transfer. The line of colors to select from is the largest yet produced, and includes several brilliant and striking hues of cardinal red, purple and blue. They are now prepared to sell their tissue in cut sheets or in the roll or to make carbon prints for the trade. Their line of roto-graph bromide and rotox gas-light papers was also shown in a convincing display in black and white and sepia toned prints.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

MAXIMILIAN JAHNELKA.—Any good formula, such as the following, of edinol will answer for machines as well as ordinary development:

Edinol	45 grains
Sodium Carb. (crystals)...	480 "
Sodium Sulphite "	480 "
Water	10 ounces

The multiplying factor of edinol is 20, and it applies to the developing machine as well as to developing by "time"; and to find the machine time you have only to find something like the time of first appearance at the temperature at which the machine will be employed. It is not necessary to be very exact. Develop a single exposure of the film, noticing the first appearance with an average temperature, and twenty times that may be taken as about the machine time. For example; yesterday, the temperature of our dark room being 73, the first appearance on a plate was at 28 seconds, and we had a perfect negative, so far as the technique was concerned, in a little over nine minutes; which may be taken as near enough to machine time.

There should be no difference between the developing of snap-shot and time exposures, and there is none when both are sufficiently exposed. But the snap-shot, as a rule, is underexposed and more often than not very much so; and such are more likely to have the best that can be got out of them in solutions weaker in reducer and stronger in the alkali than the above, or in the same solution very much diluted so as only to bring out a weak image to be further improved by intensification.

MAX GAEGIN.—We understand that the dyes referred to and indeed all the others likely to be used in photography may be obtained at 122 Hudson Street, New York. Victor Koechi & Co. is, we think, the name of the firm. We have not tried either and so cannot speak from experience, but both

are being largely used in Briton by three color workers, and also by screen makers. If the maker of the plates cannot tell you what screen to employ you can find it only by experiment, and not knowing the plate we, of course, cannot help you.

L. M. SANDERSON.—The best thing to do with an overprinted piece of P. O. P. is to throw it away and print another; but if you will experiment, try the following solution:

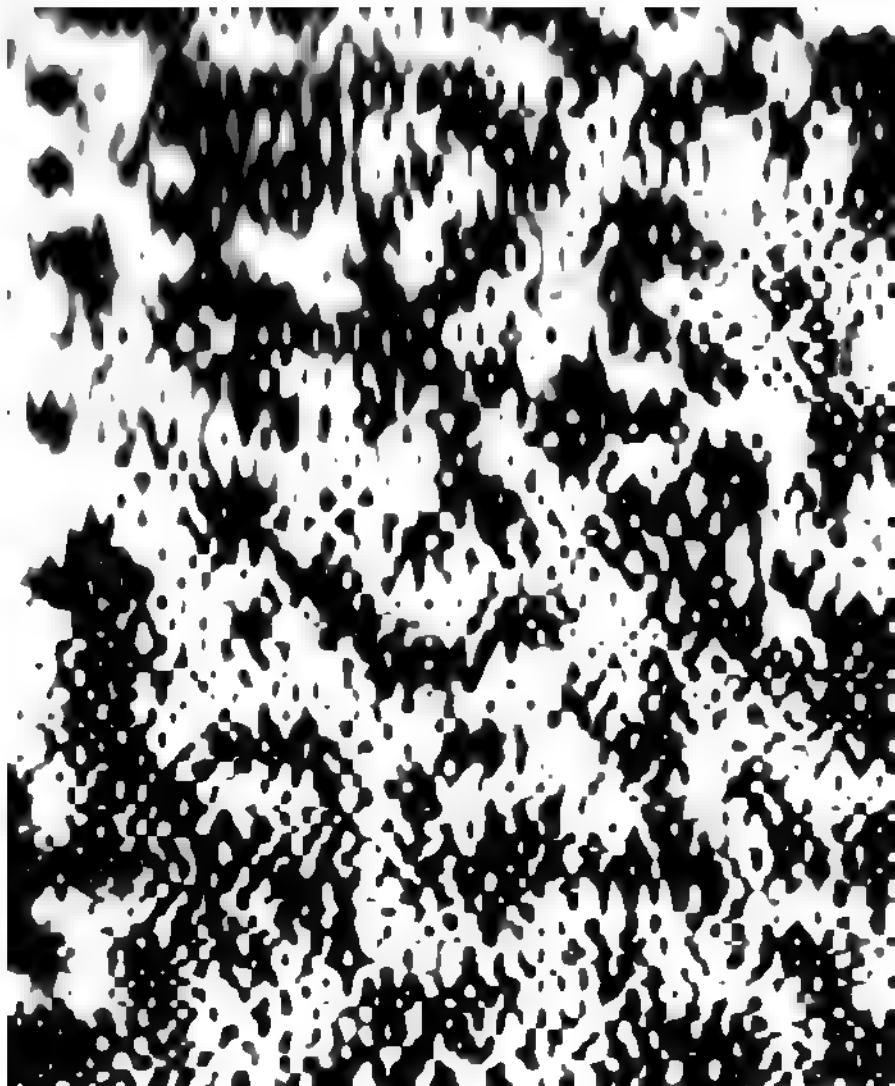
Sodium Hyposulphite.....	240 grains
Uranium Nitrate.....	15 "
Water	5 ounces

The prints may be transferred to this direct from the fixing solution, or after they are washed and dried, and watched till the desired reduction has been effected. We give this for what it is worth as we have not tried it, although we know that Farmer's solution answers the purpose but with a liability to leave a rather troublesome stain.

DR. F. E. WEEKS.—The "Hyposulphate" to which you call our attention on page 424 of our September number, was a mistake overlooked by the proof-reader, and should have been hyposulphite. The Bayer products should be found at any stock house pretending to be up to date, or, as may be seen from advertisements in every one of our numbers, at 40 Stone Street, New York. We had forgotten the papier mineral but shall inquire and let you know.

HARRY CRAIN.—Please in future to notice the direction at the head of this column; attention to that would have given this a place in our September number. Magnesium picrate may be made by saturating acid picric with magnesium carbonate, but alkaline picrates are dangerous things to handle, exploding with violence at certain temperatures, so that you had better buy it. It may be got from Eimer & Amend, 18th Street and Third Avenue, New York, or any other manufacturing chemist.

U of M



THE PINES' WHISPER.

Geo. H. Seely.
First Salon of the Salon Club of America.

THE
AMERICAN AMATEUR PHOTOGRAPHER.

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NO 12

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LECTURING WITH THE LANTERN.

BY DR. JOHN NICOL.

LANTERN Lectures, or, according to at least one popular lecturer, "Travelogues," are said, and I believe with truth, to be waning in popularity. As to the cause of such waning there may be differences of opinion, and I hold my own as to several very strongly. The "Man in the Street" is pretty clear as to one cause at least, and indeed in his opinion the only cause, the more attractive cinematograph; the moving figures natural as life itself; and if he happens to be an Irishman, "more so." Nor is he—the Irishman—so very far wrong when it comes to the life of a plant where the growth of weeks is so bottled up as it were, and shown in a few seconds.

But the man in the street is wrong in this case as he is in many others.

He measures other people's corn by his own bushel, forgetting or never having known that the lantern could be used for other purposes than mere amusement. He should know, however, that while the lantern readily lends itself to the amusing of those who want nothing higher; it is also in the highest degree, better indeed than anything else, suited for illustrating lectures on science, art, and especially travel.

With those, then, who care for instruction more than mere amusement the lantern will always hold its own in spite of the popularity of the cinematograph, and therefore we must look for some other cause for the admitted waning of the lantern lecture. And I think it or they are not far to seek.

One, although not the most influential, is the nature of the average set of slides and the number generally considered necessary for any one lecture. Any one who has ever sat in an uncultured audience, uncultured, I mean, from an art and technical point of view, must have noticed that it is always the worst slide that meets with the greatest degree of applause; and that if there is one harder, more deserving the name of soot and white-wash, more brilliantly white and black on the screen than the others, that is the one that "brings down the house." Professional slide makers catering for the public, find their interest in making what that public prefers, and as many, perhaps most, of the lantern lecturers buy most of their slides, and when they make them imitate those they buy, so that the kind of people most likely to continue attending lantern lectures rarely see a really fine slide and soon tire of looking at such as are not so.

But probably the greatest enemy of the lantern lecture is the average lecturer himself. Too often such lectures are given gratuitously for church or other charitable purposes. Unaccustomed to speaking in public, and with a borrowed set of slides of which he knows but little, or even with a set borrowed because illustrating parts that he had recently visited, he "hums," "haws" and "er-ers;" and without a systematic arrangement flounders away, so as to extract pity from his friends and laughter or disgust from the audience in general. Nor is he better when he tries to make

the preparation which he thinks the platform requires. He prepares his lecture carefully, and being unable to "commit" sits or stands before a shaded candle or lamp; and if it has a red disc to be opened and shut as a signal for the changing of the slide he likes it all the better; and reads in a voice that rarely reaches beyond the middle of the room. The slides, drawn from various sources, are marked in different ways or not marked at all; and, not having learned the results of curiosity and left them in the lantern table after everything was ready, 37 comes instead of 36, or 38 appears upside down.

The lantern lecturer, like the poet and the artist, is born, not made; and only those that are born so should mount the platform. He should know what a good slide is, and under no circumstances should he ever show one that does not reach a certain mark. In slides for lecture illustration technique is of more importance than Art with the big A, and however much it falls short of the canons of Art, its technique must be as nearly perfect as possible. It should contain no more clear glass in the lights, nor true opacity in the shadows than there are in nature or the subject, which in nine cases out of ten is none; and be as full of gradation between the two as the photographic art can make it. He should see that the slides are properly marked and arranged, and then keep them under lock and key or not let them out of his possession till the lecture is about to begin.

He should make himself thoroughly

acquainted with his subject, either by personal examination or careful study of what has been written; writing out the lecture if he cares so to do, but in no case and under no circumstances should he take it to the place of lecture. If he can "commit," well and good, and perhaps whether or no, he should make notes in the form of

as many, so that it is no wonder that an audience gets tired and generally sore in the neck, the screens generally being placed too high for comfortable examination. During many years of fairly successful lantern lecturing I made it a rule never to show more than fifty slides during a lecture illustrated by slides, and never more than

No Title.

UNIV. OF MICH

Geo. H. Seely.

at Salon of the Salon Club of America.

cards, one for each slide and holding them in his hand like a deck of cards, turning the front to the back as each slide is changed; there being always sufficient light reflected from the screen to read them. And here I may say that, as a rule, far too many slides are selected for each lecture, generally at least one hundred and often twice

one hundred in an exhibition of slides with descriptive lecture, two very different affairs, and requiring very different treatment.

Not less important, perhaps, is the method of indicating the changing of the slides, which to do properly depends as much on the operator as on the lecturer. Once on a time, but that

was in the long, long ago, I confess to having used a bell, carried in the hand and so constructed as to make only one stroke; the idea taken probably from the ringing up of the curtain at our theaters, but that was soon abandoned for a method that included no signal and one which I have continued ever since. Signals of any kind are an abomination soon caught on to by the ever present small boy, who delights in imitating them when he can, to the annoyance of the lecturer and the excitation of the risible faculties of the audience, putting them out of his grasp to an extent that he cannot overcome. As I have often said, the lecturer and operator who cannot conduct an exhibition without visible or audible signal are unfit for the jobs and should turn their attention to something else. It may, of course, be done in several ways, but mine is something as follows: Suppose the subject is a cathedral interior and a certain slide is on the screen, the necessary hint is given thus, "Turning to the right we ascend three steps and come to the recumbent figure of," etc., "recumbent" being the cue that tells the operator to put in that slide, while it is at the same time a necessary part of the lecture. Or, "The hill is steep and the climb fatiguing, but the reward is great as the scene on the other side comes into view." "The scene on the other side" is here again the cue; and as I said before, the one that cannot give and the other take such cues are unfit for the lantern lecturing business.

And just a few words more on a

subject on which I have my own views, but on the correctness of which I am not quite so confident. I have never used a double lantern, the so-called dissolving views, the first that I saw having settled that point in my mind once and forever. The first on the screen was a church with a steeple and the succeeding slide included a cow grazing, and during the period when the one had not quite gone and the other had not quite come the cow appeared suspended on the very point of the steeple. I generally carried my own lantern, everything including the lime-light burner being contained in a box measuring $8 \times 6\frac{1}{2}$ and 5×2 , which could be brought into play in a few minutes and gave a brilliant disc on a twelve feet screen. In halls already provided with a lantern I, of course, employed it with its operator, but had never any difficulty in getting him to understand my method of indicating the changes; and never allowed him to use more than one of the two or three lanterns in his charge.

My objection to the dissolving by double or triple lanterns does not of course apply to the kinds of lectures got up mainly for amusement, and with sets of slides prepared for dissolving, "Effects" as they are generally termed. They are sometimes very beautiful when the hand painted slides are fine; but for the ordinary instructive lecture with the ordinary set of slides, the single lantern with the pass through carrier is, in my opinion, infinitely better than any method of so-called dissolving.

THE PLOWMAN.

UNIV. OF MICH.

Ed. J. Daw.

First Salon of the Salon Club of America.

THE FIRST AMERICAN PHOTOGRAPHIC SALON AT NEW YORK.

A Few Remarks Inspired by a Press View of the Entries.

By ROLAND ROOD.

On the fifth of December, 1904, the First American Photographic Salon at New York will open its doors to the public. The exhibition will be held at the Clausen Art Galleries, No. 381 Fifth avenue, and will be visible until the seventeenth of December, the admission being free to all.

Few art exhibitions of any kind have ever been so energetically exploited, few organizing committees have ever prophesied such success, and rarely has there been attempted to combine under one roof such a wide

scope of art— "Many schools in art and all good."

The objects of the Salon Club are manifold. Firstly, to be democratic and give a fair opportunity to all who may exhibit; secondly, to encourage new talent; thirdly, to show no favoritism and to *give every picture a fair judging*. To completely ensure the above intentions and preclude the possibility of any "one 'school' or 'fad' commanding precedence," a jury of twenty-one famous painters was promised, the idea being that the judging

of such a jury would be of "supreme authority." Europe, as well as America, was asked to exhibit, and 9,100 photographs were entered—7,400 American and 1,700 European. The jury did their work and sat and judged three times, and selected 350 prints which they deemed to possess sufficient merit. On the first day of judging the jury was composed of Kenyon Cox, Fred'k W. Kost, Robert Henri, George R. Barse, Jr., Alphonse Jongers, Will H. Low, H. Bolton Jones, Irving R. Wiles, Walter Clark, Ben Foster and Francis C. Jones. On the second day there were about the same number on the jury, with John La Farge presiding.

Among the American pictures, which are the only ones I will speak of to-day, are some old familiar prints which have been going the rounds, not merely in the exhibitions, but also in the magazines. Of course there are many new ones, but I must severely censure the committee who framed the conditions for omitting to insert such a clause as would preclude work that had been published or exhibited before.

I, however, will refrain from mentioning any picture I may have seen before, unless it be for some such obvious reason as that it accompanies this text, but be polite and begin our review with the work of Mr. Curtis Bell, President of the First American Photographic Salon at New York.

I like the President's work. He is not at all a bad technician, and all of his conceptions are permeated with a kindly human feeling. He displays a

largeness and a warmth of treatment that is not too common in photographic work, even his forest scenes, with those stately, dignified trees are human; we feel that they speak to us in some strange language that we possess in common with them. Mr. Bell has thoroughly combined his thought and personality with nature—a most difficult thing to do. In every respect Mr. Bell is a worthy president of the Salon.

George H. Seely's work should next attract our attention. He is the one big man whom the Salon has brought out. Scarcely more than a boy—not twenty-five—he has already acquired a power of expression which places him in the foremost ranks of American photographers. He writes me that he has studied art at the Normal Art School, Boston, for three and a half years, and photographed scarcely longer. In him is added to our small but strong band of painter photographers another example of what the practical study of drawing and painting may do in developing a photographically artistic attitude toward nature. Perhaps the early influence of his home, that peaceful village, Stockbridge, Mass., may also have had its influence in forming a single-mindedness of purpose that is visible in all he does. His art is entirely subjective. He presents to us not nature, but a recollection of what we once saw, or thought we saw, when in a dreamy mood. His work may suggest Whistler to some, but I think that is merely accidental. He has arrived at a few of the same conclusions

WOODLAND MIST

Curtis Bell.
First Salon of the Salon Club of America.

that Whistler did, but through the channel of thought and not of imitation. He is not a fuzzytyper, and can model when he chooses. He differentiates his values in a masterly way, and uses the full gamut of values. His pictures hardly bear description. They are purely painter expressions of truths, and of such truths as can only be told in the graphic arts, and not in words. He himself seems to have felt this, giving some prints the conventional title of "Landscape," and one, which we reproduce, has no title at all. The partially draped figure of a man standing by the side of a brook, a lyre in his arms, an attitude of listening, would suggest almost any

literary conception. Yet no title would in any way convey the one painter thought which permeates the whole. (The reproduction is not a very good one.) "The Pines Whisper" is a much better reproduction, and again we see the artists' psychological attitude toward nature. We are led into another world.

All of Seely's work shows a strong appreciation of the classic and of symbolism, but for all that he is a purely American product, and in his artistic evolution an idealist in a highly evolved state.

Mrs. Bennett is a most conscientious and intelligent student of nature.

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TWILIGHT IN PASTURE.

E. M. Shipman.
First Salon of the Salon Club of America.

She loves materialism in its higher forms, and reminds me strongly of that army of young painters in Paris, who, having taken Bastian Lepage as their master and French peasants as their motif, and having worked scientifically and hard and long, and possibly having won some minor medal, still continue in the same path. Her subjects are a little uninteresting, not because they are uninteresting in themselves, but because we are tired of them; we have seen them a thousand times. Let her now forget those artists whom she has been admiring so long, and from whom she has in part learned her technique; let her express her innermost self, and then and only then, will she rank among the best of the day. She can do it if she only will.

A twilight by Shipman is not uninteresting—sheep grazing, against a background of dimly seen apple trees, farm houses hills and sky—and express a practical feeling—bought at an enormous sacrifice of values. The effect would have been more powerful if Mr. Shipman had thought a little less of "tone" and more of truth.

A beautifully chiseled portrait (Mrs. Coloney), by Allen Drew Cook, proves that to portray feminine beauty it is not necessary to lose all the modeling in a foggy smudge; and shows conclusively that even poor nature (forgotten by many photographers) has also methods of producing the beautiful, and that those photographers who are still in the mire of "tonality" (a phaze through which all art students must pass) have still a

long road to travel before they achieve art.

The two accompanying prints by Edw. J. Daw are more than studies, and in "The Plowman" we feel the soil and the dreariness of the barren fields; both the man and the horses are working and moving—and to give action to animals and figures is more difficult in photography than in drawing. The "Cedars" is an excellent and unconventional composition, and combines detail and clearness of atmosphere with poetical feeling, a not too usual combination in a "mechanical art."

The "Peaceful Valley," by W. H. Porterfield, is somewhat in the same vein of thought as Daw's work, but would have been more effective if it had been printed in some other color

Carl Rau.

MARSHLAND.

First Salon of the Salon Club of America.

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A PEACEFUL VALLEY.

W. H. Porterfield.
First Salon of the Salon Club of America.

blue in the shadows is suggestive of sunshine, but green, never!

The "Italian Lane," by Mrs. E. M. Willard, was selected for reproduction with the idea of pointing out what is bad, not possibly the accompanying print, but the original, which is frightful on account of its color—a strong red! Can you imagine it? Red chalk outline drawings of beads and nudes are delightful, the red suggesting life, flesh and blood, but not sunshine. The color to be chosen for printing any given effect is no more a matter of taste than is the choice of values; it is always a matter of science.

In the next issue I will review the completed exhibition.

ROLAND ROOD.

Mrs. E. M. Willard.

ITALIAN LANE.

First Salon of the Salon Club of America.

than green. Photographers, as a class, seem to me to be somewhat lacking in the color sense—the very fact of their being willing to confine themselves to black and white argues strongly against their color appreciation—and when they attempt color printing they often do the most horrible things. The question is too complex to enter deeply into at this moment, but suffice it to say that for psychological reasons the mind *never* associates bright sunshine with green. The moment black and white, or grays, or dull browns, are abandoned as a means of graphic expression, the color problem presents itself, and the difficulties are enormous. The combination of yellow in the lights and dark

Allen Drew Cook.

Portrait of Mrs. Coloney.

First Salon of the Salon Club of America.

CEDARS.

E. J. DAW, Washington, D. C.
First Salon of the Salon Club of America

WHY AND FOR WHAT DO YOU WANT A LENS?

By M. H. NEWLANDS.

IF it be true, as the editors have often said, that the professional photographer knows less about his lenses than about anything else that he employs, it is much more true of the bulk of the infinitely more numerous amateurs; and therefore these questions are addressed to both.

Why do you employ a lens? This question, on the face of it and to the average amateur will seem absurd, as lenses have always been and always will be employed in photography. But

it is true, nevertheless, that better pictures, from a pictorial point of view, can be made without a lens—with a pinhole than with the best anastigmat, *if left to itself without control*. Between three and four hundred years ago Giovanni Battista della Porta, a scientist far ahead of his time, astonished the Neapolitans by showing pictures in a "Camera oscura" or dark room, made by passing the rays from outside objects through a small hole in one side of a box, or window shut-

ter, and receiving the picture in the other side of the box or opposite wall of the room. A lens was soon inserted in the small hole whereby that hole might be made much larger and so pass much more light, and from that time till comparatively recent times the small hole was either forgotten or at least neglected.

During, however, these "recent times" the pinhole, a much smaller affair than was thought of by Porta, has been revived; and under suitable conditions pictures made with it that have found favor in the most conservative of the salons and exhibitions. In the ordinary landscape, for example, rays or pencils of light are reflected from every point of every object, and unless the hole is very small they will overlap each other, producing confusion on the sensitive plate; although, at the same time, it must not be so small as to produce diffraction, a kind of turning round the edge which would lead equally to confusion. With a suitable pinhole (needle-hole would be a better name), which means a hole of suitable size, perfectly circular, and with walls as thin as it is possible to make it, pictures in every way satisfactory may be made, the only one drawback to the method being the length of time occupied in the exposure. And that answers the first question. Why do you want a lens? Simply to bring the exposures within a reasonable limit, say, seconds or even less instead of minutes. This the lens does by, instead of dealing only with the most delicate pencils, gathering them up in

one bundle as it were, keeping them each in its own line, refracting and bringing them to a point or focus; so that the exposures are limited only by the relation of the working aperture to the focus of the lens; and such has been the success of the optician that it is no stretch of the imagination to say that with conditions requiring, say, a pinhole exposure of five minutes he has given us a lens that will do the same amount of work with an exposure of the one thousandth of a second.

The second question, "For what do you want a lens?" is not so easily answered, as it resolves itself first into a question for you to answer; you tell me what you want to do and I shall tell you what kind of lens to get. Let us suppose, however, that you have got over the preliminary stage; have bought an outfit including camera with lens already fitted and found it unsuited for your more advanced purposes; and having learned that the only way is to first buy a suitable camera, without a lens, of course, now want to secure the most suitable lens for the work you intend to do; which is landscape pure and simple, and that you have got over the desire for the "sharp as a needle" photography.

For purely landscape photography nothing is better than a single lens, but it should be achromatic or with its chemical and visual rays coincident. A lens brings the rays from an object to a focus in virtue of its refracting power; that is, its bending of the rays and bringing them to a point. But it does not bend the

three, the red, green and blue-violet equally; bending the latter most, the green less, and the red least of all. Mixtures of green and red, however, are more luminous than blue or mixtures of it with green, and of them mostly the visible image is constructed and focussed. But green and red have little action on the ordinary sensitive plate, so little indeed that the blue-violet has been called the chemical ray; and its focus being nearer the plate than the rays focussed, the photographed image through an uncorrected lens is blurred and wanting in definition unless after focussing the visible image the plate had been brought nearer the lens by about a thirtieth of its focus, or rather of the distance between the lens and the plate after focussing.

Fairly well corrected single lenses are, however, made by most opticians, and as most of the earlier landscapes were made by them, those who are best acquainted with them know that for landscape they possess advantages over their more expensive brethren, give a more brilliant image, and cost less than a third of the price of rectilinear of equal focal length. Their one great fault in landscape work is their lack of rapidity, $f/16$ being the largest aperture with which good work can be done, requiring an exposure four times that of the R. R. at $f/8$; but so long as you are content to deal with objects at rest in pure landscape you cannot do better than stick to the single lens.

But the single lens has a fault that makes it unsuitable for subjects in-

cluding straight lines, especially when they are near the edge of the plate; they are more or less curved, barrel shaped, with the stop in front and the reverse with the stop behind; and as the fault of the one is corrected by the fault of the other, the optician placed one at each end of the mount, with the stop between, and so made a rectilinear lens or a lens giving straight lines. And not only so, but such an arrangement enables the lens to be wrought with a larger aperture, $f/8$ or four times as fast as either of the single lenses of which it is composed.

From this it will be evident that if you wish to include in your landscape objects in motion or even subjects in which the light and shade are rapidly changing, making brief exposures a *sine qua non*; or feel that now and then you should like to reproduce an architectural subject where straight lines are essential, you will select one or other of the various forms of doublet known by as many names as there are makers, generally with an aperture of $f/8$, although there are some as rapid as $f/6$. Such lenses are in every way suitable for all round work; even, in very good light, for quick shutter exposures. They consist of two well corrected single lenses, sometimes of equal focal length when they are said to be "Symmetrical" and sometimes of different foci, and as each may be used as a single lens such gives what is equal to three lenses.

For all or most pictorial purposes the rectilinear is in every way suitable,

and indeed by some, and those experienced pictorialists, preferred to the more perfect and vastly more expensive anastigmats, their roundness of field and remnant of astigmatism being, in their opinion, helpful in selective focussing and other pictorial dodges.

If this be so, why then do so many buy and recommend others to buy the more costly anastigmat or flat field lenses? Partly, I believe, because of the real pleasure incident to the possession of a perfect instrument, even although such a degree of perfection is not required for the intended work; partly because they or some of them are three times faster than the equally suitable lens; and partly, and probably more particularly, because in the making of small negatives for enlargement they and they only give the ideal negative. This they do because of the very corrections that make them, in the minds of the pictorialists already mentioned, less suited for direct work than the rectilinear, their flatness of field, freedom from astigmatism, and more perfect defini-

tion; the ideal negative for enlargement, being perfect in technique, leaving the art to be arranged for in the enlarging.

Just one more piece of advice, although for that there is less need than before the editors began to insist on a suitable focal length of lens. Whatever lens you may select, never forget that the most important feature of a lens for pictorial purposes is its focal length. Anything less than once and a half the length of the longest way of the plate takes you so near the object as to produce a perspective that seems altogether wrong, distant objects being dwarfed and near ones enlarged, and to such an extent that "photographic perspective" has become a byword with those who do not understand its unnecessary cause. I have given the question of the angle of view a good deal of attention, and believe that an angle of about 28° is the most satisfactory, and that is the result of using a lens of about twice the length of the longest way of the plate.

HOW I "TURNED AN HONEST PENNY."

BY A STUDENT.

A STUDENT at one of the largest of the eastern universities with not sufficient in my purse to go just where I should have liked, and, for reasons best known to myself, not caring to go to my home during the midsummer holidays, I gladly accepted the invitation of an

Uncle to spend them with his family at a "quiet summer resort by the sea." My Uncle is a keen photographer with a dark room in his cottage, which he uses only on the Friday nights, and the Saturdays, business keeping him in New York during the rest of the weeks, and of which and all its con-

tents I had the run during his absence.

The resort was quiet, I suppose, only by contrast, as in addition to some 130 cottages the two hotels were filled to overflowing during all the time that I was there, and, as usual, every third man or woman carried a camera. Nor were those camera carriers, very many of them at least, merely button pressers, as I may safely say that 25 per cent. of them carried also tripods; most of *them* taking photography seriously.

My Uncle's paraphernalia included a Wynne's Speed Tester, and, being of a mathematical turn of mind, I started to ascertain the true values of the markings on his shutters, a volute, a Thornton-Picard rolling blind, and an "atomic" on the 3a folding pocket kodak. How it came about I hardly know. The work was to me extremely interesting, and I suppose I talked about it to such amateurs as I got more particularly acquainted with, but the result was that in a short time I found that I had all I could find time for in giving correct time charts for the various markings on visitors' shutters, and at a charge of one dollar each shutter.

Of course, it wasn't a gold mine this work of testing shutters at a dol-

lar a head, especially as I generally used 7 x 5 plates and made two exposures on each marking. But I had the satisfaction of knowing that each chart was correct to the smallest fraction of a second; and there are few indeed that will not think the dollar well spent that secures for them so important a knowledge.

That such an examination is necessary is shown by the fact that of over sixty shutters tested not one was really correct in its markings, and some of them, even some of the best and most costly, were, in some of their figures, very very far from correct, the fastest sometimes being almost the slowest.

But to make such tests that shall be really correct requires practice, and enough of it to bring the testing of one's own shutter to a cost both in time and material greater than a dollar will cover, and in the nature of things most amateurs will far rather pay the price than take the trouble to test for themselves. From all this I have no hesitation in saying that if one in each town of any size will let it be known that for a dollar he will give a true chart of the times of a shutter for that sum, he will soon find all the work he can do; and so, as Milton Wade says, "If I can, you can." *Verbum sat sapienti.*

WORDS FROM THE WATCH-TOWER.

BY WATCHMAN.

The Photographer is not above "napping" more than its contemporaries. This time it occurs in its

"The Other Half" in a recent number. Contrasting the days of Daguerre with those of the present, it brings Hill on

the scene by "Hill, who used the Daguerre process." Hill's work and the work of Hill & Adamson have been so much talked about and so often seen and held up as an example worthy of being emulated, that I had thought it was known to every one that he and they wrought the calotype and modifications thereof, sometimes waxpaper, but more frequently waxing the paper negatives after they were finished; and any one who has a doubt on the subject may, by a visit to me, satisfy themselves by an inspection of some of their negatives of which I am the happy possessor. Hill may have practised the Daguerrotype, but if so, it was before I knew him, and it is a fact beyond controversy that the pictures so much talked about and so often shown were calotypes.

* * *

I have always had great interest in the sayings and doing of the Edinburgh Photographic Society, not only because of being what here would be called one of the charter members as far back as 1861, but also because it was, is and always has been one of the most energetic and successful societies in Great Britain. I have, therefore, much pleasure in giving the following syllabuses of the arrangements for general meetings and meetings of the practical section from now on to March, 1905; in the hope that they will be found of use as hints to secretaries who often find a difficulty in getting matter of interest to their members.

November 2nd, "The Picturesque in Parks and Gardens," by James Craig. December 7th, "Alpine Mountaineering in Scotland," by Rev. A. E. Robertson, B. D. 1905, January 4th, "Michael Angelo," by Mrs. Lauder Thomson. February 1st, "The Capacity of Different Printing Processes for Rendering Gradations," by W. Goodwin. March 1st, "Frans Hals," by James Paton. April 5th, "Pinhole Photography," by A. P. Noble. May 3rd, "The History of Photography," by Alex. Steuart. June 7th, Forty-fifth Annual Meeting. Practical Photography Section: 1904, October 26th, "The Camera, and the Optics of Photography," by R. F. Sherar. November 23rd, "Exposure and Development," by J. C. McKechnie. December 28th, "Printing Processes: P. O. P. and Bromide," by R. Forbes. 1905, January 25th, "Printing Processes: Carbon and Platinotype," by J. B. Johnston. February 22nd, "Enlarging," by H. S. Wallace, W. S. March 22nd, "Hand Camera Work," by J. Burns. Life and house members only may attend the meetings of this section. They will be asked to produce their cards of membership on entering the hall.

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If it be true that the gauge of an audience is the lecture it listens to, those of the P. A. of A. at St. Louis and at Winona must have been on a pretty narrow scale. At the former the "Solgram" man held forth, beginning, as usual, with the shortcomings of his predecessors in not having

reached his ideal of what a three-color process should be; which was as follows: " * * * a process for producing photographic prints in colors from the excellent negatives now possible must be simple and easy to work, permanent in its results and a printing out process requiring methods of working not far removed from the monochrome process now extensively used. Such a process I believe I shall have the pleasure of demonstrating to you now and which I call the 'Solgram.'" After this one would have expected something better than we get; but here it is. "For years I have been convinced that the three colors—yellow, red and blue—had some particular office in the world of art except tinting objects, and I invented the Solgram to prove my theory, namely, that red was the basis and warmth of a picture, blue was the great drawing master giving detail, shadow and form and yellow gave to our work life and light." It takes a good deal of ignorance to swallow the theory, and how he carries it out had better be told in his own words:

"I reasoned with myself thus: If red is the base it should be placed first upon our paper (or suitable substance), and as its office was simply to give warmth, tone or color, it need not be sharp and wiry; therefore the old gum bi-chromate pigment process would suffice, with the advantages that the pigment could be chosen for permanency and also that by reason of its color the print upon which would be visible; doing away with actinometers, etc. After printing and washing we

would obtain a beautiful crimson picture.

"Now for the blue print, which gives detail, drawing, form and shadow in the gum pigment process, I was convinced, would not suffice for several reasons.

"First. Above all, if a blue gum pigment should be painted over our red image it would obliterate it, making it impossible for any one save an expert to obtain correct registration.

"Second. As the blue print is to be used for detail, form, etc., the gum pigment print would be very unsatisfactory. Thus I was led to adopt a chemical compound which would give the required color upon being exposed to light. This idea carried out, I at once accomplished the two main points in practical color photography, namely, a means by which the shadows, etc., could be formed upon the crimson print by slowly printing and not having the fault of obliterating our crimson under first print.

"Third. The yellow which gives light, sparkle and life to a picture could be printed last over the compound image, crimson and blue giving a finished print. This last print, which, like the first (crimson print), had nothing to do with the drawing, could be made by the gum pigment process, care being taken that the yellow should not be opaque. Thus I invented the Solgram process. However, after all this work was completed I worked to perfect and form a complete color balance so essential to obtain pictures which would not appear false."

My old friend Deardorff was the lecturer at Winona. He seems to have lenses on the brain, as he goes about from convention to convention taking them for his subject; and if what our editors so frequently say of the professional photographer, that the lenses he uses are the things that he knows least about, be true, he is a much needed man. However that may be, Deardorff does know a good deal about lenses and tells them much that they are the better for knowing, although he does make an occasional stumble, as the following will show; although it is not so much a mistake in lens knowledge as a lack of appreciation of true stereoscopic effect.

"There are five general classes of lenses with which the photographer has largely to deal. First in importance, I think, is the portrait lens, and the essential difference between this and what is called the rapid rectilinear is its increased intensity or greater angular aperture. Let us consider its advantages. I think that it will be admitted by all that the most beautiful artistic pictures are those which approach nearest to what one with normal eyes sees. Now nature has endowed us with two eyes, and they are placed a certain distance apart for the purpose of conveying to our mind the idea of perspective roundness of image, distance, etc. For this reason stereoscopic pictures are considered most beautiful of all. Just so a lens having a large aperture in proportion to its focal length receiving and bringing to a focus a very large angle

of the rays of light reflected from each point which go to make up the picture, produces a round stereoscopic image and a beautiful soft gradation of tone from extreme high light to deepest shadow. But we shall observe that as we increase the angular aperture the corresponding depth of focus decreases; that is to say, the sharpness of images at varying distances from the lens varies, becoming more blurred or indistinct the farther they are away from the point of perfect focus. For this reason a lens of smaller aperture for such as landscape work, and which by reason of its smaller diameter is constructed along lines which admit of greater depth of focus, is better adapted for this class of work. I would have you remember, however, that although it be necessary to decrease the angular aperture, or at least the size of stop employed to obtain the depth of focus required, the principle of stereoscopic effect still holds good, and for this reason I give you this *infallible rule* for the use of your stops or diaphragms. *Always use the largest diaphragm you can that will produce the definition you want.*"

The pith of the paragraph is in the last sentence and is most excellent advice, but although, doubtless, he knows just what he means about the stereoscopic effect he should not have mixed it up with effects that are not stereoscopic, to the bewilderment of most of his hearers. In saying what I have said I am taking it for granted that the paragraphs are correct, that is, that the lecturers have been correctly reported, and as they were

clipped from *The Photographer*, it is to be presumed that they are so.

* * *

I know that the photographer plays an important part in the electioneering business in the British Isles, but doubt whether they can "double time" as Mr. Dunn is reported to have done at a recent campaign meeting in Saratoga. Senator Fairbanks, the Republican nominee for Vice-President, began his speech at 9:30 and was due to take train for another town at 10:15. In the course of the speech Mr. Dunn made the arranged for snap-shot, and exactly at 10 he handed a developed, fixed, washed and mounted print therefrom to the speaker to be by him handed to the agent of the press waiting for it.

* * *

Some photographers do, or are said to do, queer things. It would seem that when the jurors in the photographic section of the St. Louis Fair had completed their work they had agreed to keep their thumbs on the awards till submitted to the Grand Jury; but, according to *The Amateur Photographer*, one of them, Mr. Stein, of Milwaukee, at once began to write the British prize winners, offering one of his pictures for one of those to which the prizes had been awarded, the words, according to *The Amateur Photographer*, being "you were a winner." Referring to this the *Amateur* has, in its October 18th number, the following:

"Referring to our leading para-

graph of October 4th, quite a number of English exhibitors in the Photographic Section at St. Louis Exposition have received Mr. Stein's communication. Mr. Stein, who is a prosperous professional at Milwaukee, was one of the judges on the International Jury of Award for Photography. On the completion of their task, the judges having mutually agreed not to divulge the result of their award, Mr. Stein seems to have promptly sat down and written off to a large number, and probably to all, of those who were winners, in the terms we have already premised. This is, we understand, quite typical of American "smartness"! And it is not to be wondered at that men like Mr. Alfred Stieglitz, whose devotion to photography is so wholly disinterested, experience such difficulty in contending with contemporary photographers who condescend to such paltry practices. Last week we had the pleasure of meeting Mr. Craig Annan in London, who has just returned from the fulfilment of his task as one of the judges at St. Louis, where he represented Great Britain, and he informs us that the judges' award must first be ratified by the Grand Jury before it can be officially announced, and he very properly declined to give us the slightest inkling as to who the fortunate recipients of awards may be.

"Poor Stieglitz — handicapped by ill-health against which the soul of a very demi-god incessantly strives; struggling ever for the artistically clean, and pure, and right; sometimes adopting means which to the onlooker

may seem undiplomatic and tyrannical, yet doubtless necessitated by his more intimate knowledge of his environment—we say again, poor Stieglitz. But Stieglitz is rich, ever so rich, in European recognition, and the staunch friendship of those in England, France, Germany and Austria who know his worth. In the houses and friendly circles of the really great and influential, Stieglitz were a thrice welcome guest where the worthlessness and elementary knavery of his antagonists is all too apparent for deception."

* * *

Who would have thought of price cutting, the bane of the present day, having begun as early as 1846? So at least I take it from the report of an address by the veteran Bogardus at the St. Louis Convention. In a series of reminiscences, both interesting and amusing, he told of his earlier experiences and the number of daguerrotypes made from week to week, and said that the case and fittings in which they were placed for delivery with the plate cost forty cents; and that his price was a dollar and a half. Those who know the labor involved in the production of a daguerrotype, especially in those early days, will not consider one dollar and ten cents very liberal payment, although that, of course, is not the point. The point is in the fact that this was less than the half of what was being charged for the same article on the other side of the water, the side on which I then was, and I remember as if it had occurred but yesterday of being in the

wooden erection on the "Mound" in Edinburgh, occupied by Popowitz as a studio, seeing him insist on the extra shilling, a guinea (\$5) being the price, and the customer wanting to get off with paying of a one pound note, twenty instead of twenty-one shillings. Later, of course, the price came down, Georgiades, a Greek, being the first to lower them, but in 1846 and long after the even guinea was the sum.

* * *

The Photo-Beacon, in its November number, pays to the Photo-Secession probably the greatest compliment that it has yet received, and that it was unintentional probably makes it all the more so. Friend Todd, in speaking of the photographic exhibit at the St. Louis Fair, and incidentally of the refusal of the Photo-Secession to send examples of their work, says * * * these workers declined to take part in the photographic exhibit in the Liberal Arts building, *making the country in which this great exposition is held take an inferior position to some foreign nations.* The italics are mine, of course, and although the Secessionists have, and very justly, a pretty high opinion of their work, I doubt whether any or at least many of them went so far as to suppose that its absence would have the effect suggested by Mr. Todd.

* * *

The prizes offered by dealers and manufacturers are now so many and so valuable that it would not be difficult for one well up in both the art and technique of photography to make a fair livelihood in the getting of them.

Nor need one be a good photographer to secure some of them, the Coxin prizes for example, in which the exercise of a lively imagination and a little guessing as to the meaning of certain pictures secured the prizes.

And this Coxin contest sets me on another tract. The colored solution has been exploited here for some time, and yet we hear little or nothing about it. The same idea was exploited in the long ago, under the name of nuctigonia or something like it, but it fell flat as the coxin is like to do, and yet its owners have such confidence as to take this rather costly means of advertising it. There were in all sixty-eight prizes, the first a Humber Standard Motor Bicycle; the second Riley's combined Billiard and Dining Table; the third a Monarch Gramophone; the fourth and fifth Photographic apparatus. What the other sixty-three were I do not know, but duplicates of the first five were given to the dealers from whom the bottles containing the coupons that gained the prizes were bought. Here follows a question for those who bother about what is and what is not a professional or amateur? Is one who makes his living by gaining prizes offered for photographs or prizes in any way connected with photography, an amateur or a professional?

* * *

What is a Travelogue?—While a rose by any other name might smell as sweet, there is, in some cases at least, more in a name than that quotation would imply; and evidently Burton Holmes has found it so. When,

in 1885, 1886 and 1887, I was in Chicago laying the foundation of *The Photo-Beacon*, he was a pretty constant caller at the office, a well brushed youth beginning to dabble in amateur photography and anxious to pick up all the information he could. He was unlike the "Young America" of his age, although, of course, I do not say it to their detriment; Harvard and Oxford are very different institutions, but both equally good, and he seemed to me more like an aristocratic Etonian in his gentle ways than the sturdier outcome of the western method of training.

When, shortly after having decided to make my future home in America, I was chatting with my life-long friend, J. T. Taylor, then editing *The Photographic Times*, as to the turn my activity should take, he said: "If I had your gift of the gab before the lantern screen, your collection of slides and your ability to increase it, I would not edit the most successful photographic journal ever published. Stoddard has the ball at his foot and carries all before him, and the crowds you were wont to draw should leave no doubt as to your success here." But I thought differently then; although I confess that since watching the success of Burton Holmes I have sometimes been inclined to think that I had made a mistake. But no. I could not have invented "Travelogue," nor perhaps had the good sense to adopt it for a lantern lecture had it been invented for me, and "All's well that ends well," and Burton Holmes deserves all the success that he has got.

NOTES.

LONG FOCUS LENSES:—Although our fight for the recognition of the need of a lens of sufficiently long focus is practically gained, we still like to add to the evidence as circumstances occur, and therefore have pleasure in extracting the following from the excellent work on Landscape Photography by Fritz Loescher.

"A narrow-angle picture is shown to be identical with the central portion of a wide-angle picture from the same view-point. Another pair of views, however, show a striking difference. A house is taken with a wide-angle 5 in. lens and a narrow 13 in. from such positions that the height is the same in both prints. The narrow angle gives a natural effect; the wide-angle picture, while resembling the other in the one particular of the height of the building, exaggerates everything in the foreground and diminishes everything in the background, while the forced perspective makes the house appear distorted. Things in Nature are generally looked at from such a distance that the whole object is discernible without much movement of the head.

"Short-focus lenses are a survival from the day when the aim of the photographer was to compress as many things as possible into a small space.

"An angle of 36 deg. may be considered to give natural results. Its perspective differs but little from the subjective perspective of the eye. Such an angle is equivalent to a focus of about $1\frac{1}{2}$ times the length of the

plate, with a minimum of 10 in., the normal distance at which the eye looks at small pictures."

The angle of 36 deg. which he recommends is given by practically the minimum length of focus we have always insisted on, once and a half the length of the longest way of the plate.

Still another confirmation of our views comes from the Rev. T. Perkins, a well known writer of great experience. In an article in *The Photographic News* on Angle of View, he says: "There is little doubt that photographers, as a rule, embrace a wider angle than painters; largely due to the fact that they buy quarter or half-plate 'sets,' and the dealers, in order to keep down the price, supply a lens of far too short focus." We have said something like this dozens of times, and the moral is this: never for serious work, when direct pictures are the object, not small negatives for enlargement, select the camera and lens otherwise than separately, taking care that the lens is not shorter than once and a half the length of the longest way of the plate, and twice that length would be better.

THREE-COLOR PRINTS:—The making of three-color negatives having been brought well within the ability of the intelligent amateur, the adjective being used to distinguish the lover of photography *de facto* from the mere button presser, and at least two practically simple methods of printing from them being about to be placed on the market, we feel that we can with

confidence recommend our readers to give three-color photography the attention that it deserves.

The first printing method is that of Dr. Koenig we have already noticed, that of paper coated with leuco colors that become visible on exposure to light, and which will be found dealt with on another page; and the second is equally simple. It is about to be introduced by the Rotary Photographic Company, and consists of suitably colored, pink, yellow and blue, carbon tissue spread on thin celluloid; to be printed through the support so as to get rid of the necessity for transfer. The yellow is printed through the negative made with the blue filter the pink through that of the green, and the blue through that of the red.

The yellow is developed first, mounted film down on to white paper, and the celluloid stripped away; the red is next mounted on top in exact registration and again the celluloid stripped away; and finally the blue print is mounted in register on the other two, and the celluloid being stripped, the result is the finished three-color print on paper. That seems extremely simple, and indeed excellent results have already been produced. It will be cheap as well as good, and has the advantage that it is a process, viz., carbon, with which many of our readers are already familiar.

LIPPMANN'S PROCESS SIMPLIFIED:—According to M. E. Rothe, in a paper before the Paris Academy of Science, Lippmann's Interference method of color photography, which has hith-

erto been mainly a curiosity in the hands of a few because of the necessity for special apparatus, may now be practised by the many with nothing more than the usual camera, or with very little alteration thereon. It will be remembered that the crux of the process as discovered by its author was the reflection of the rays forming the image back to the film by a surface of mercury; and this Mr. Rothe, after much consideration, believed might be done by a film of air as well as by the liquid metal. Experiment proved the reasoning to be correct, the only difference being that a much longer exposure was necessary. This is all that can be gathered from the report, but it is sufficient, we hope, to set some of our experimental readers a-going, and we shall be glad to hear of the results. It will be remembered, of course, that the ordinary plate will not answer the purpose; as it must be extremely thin and of the finest possible grain; more like the plate in the old albumen process, although we do not know that an albumen plate has actually been tried.

LANTERN SLIDES:—We have had more than once to mourn over the lack of progress in slide making in this country, as shown especially by the slides of the Interchange; and there is a feeling of comfort in the fact that other countries are not getting ahead of us in that branch of photography. This comfort comes to us from an article in *Photography* in which the editor makes the plaint while noticing the result of his slide

competition. Regarding the falling away he says:

"But if the number shows so marked an increase—quite twenty-five per cent.—the quality has not improved. We are sorry to have to say it, but this competition—and not this one only, but every exhibition that we go to—tells the same tale of a falling off in the excellence of lantern slides generally. Some attribute this to the facility of the commercial lantern plate, which has completely taken the place of the home-prepared, or at least home-coated, collodio-bromide lantern plates of a dozen years ago. But this can hardly be the case, because not only are the commercial lantern plates capable of giving as fine slides as ever could collodio-bromide, but they did so a few years ago.

"The reason for the deterioration lies, we are afraid, in the fact that the lantern slide is unfashionable amongst those who affect the artistic pose. It is not like any other form of graphic art; it would be impossible to mistake a lantern picture on the screen for an inferior charcoal sketch or hurried crayon drawing, and therefore to those whose art is entirely a matter of pose—and there are plenty of them in the photographic world—the lantern slide is a thing to be despised. When once the fashion has been set, there are plenty more who accept the doctrine without much thought, and others who would make slides if they found they were appreciated, but not finding it so, do not. Hence, with a few notable exceptions, the best workers have not troubled themselves to make

slides. Amongst the exceptions, however, are Wellington, Cembrano, Evans and Stieglitz."

How far *Photography* is right as to the cause of the deterioration, we do not know, as our complaint has always been as to the technique of slide making. White and black; summer snowiness; soot and whitewash, or whatever name may be applied to the slides with nothing more than the two ends of the gradation that should go right on from the faintest deposit in the shadows to opacity in the highest of high lights.

A NOVELTY IN BIOSCOPING:—The following paragraph, which we clip from *The Amateur Photographer*, will give some idea of the various uses to which the cinematograph is being put, and also of the outlay to which the makers of films are prepared to go to secure attractions for popular exhibitions.

That palatial Atlantic liner of the North German Lloyd fleet, the Kaiser Wilhelm II., will, on her next voyage, be the subject of Mr. Charles Urban's attentions, and will be bioscoped in every part, so that anon whilst comfortably seated in a theatre stall one may learn in a way that no other means could teach the life on a trans-Atlantic greyhound. An audience will see and learn more than they would if on the liner itself, for engine-room, stokeholes, kitchens and many more unseen places in the very bowels of the great ship are to be portrayed, for which purpose a perfect blaze of artificial light has been provided, and

a special lens of unusual diameter has, it is said, been produced for the Urban Trading Company, by whom the work will be carried out. According to the *Daily Mail* the experiment of bioscoping the liner will cost no less a sum than \$7,500. By a curious coincidence the same ship will have on board some noted American photographers, who will be on their way home to New York: Mr. and Mrs.

Stieglitz and Mrs. Coburn and Mr. Alvin Langdon Coburn. The latter has, during the past three months, been busily at work in London and Edinburgh, making portraits of distinguished men and views of London, Edinburgh, and elsewhere for New York publishers, who are waiting to pay fees for reproduction rights which would make illustrators in this country envious.

WYNNE PLATE SPEED NUMBERS.

BY HENRY WENZEL, JR.

A taper-slot in the dial-plate of the Wynne Exposure Meter permits of the exposure to diffused daylight of successive segments of the sensitive paper therein. On either side of the slot are painted tints, the darker of the two being known as the standard tint. The time taken by the sensitive paper in coloring to the standard tint is called the actinometer tint, presuming, of course, that directions are followed in obtaining same. The Wynne speed number for any plate or film is the F value of the diaphragm that will perfectly expose such plate or film in the actinometer time. How is this diaphragm value ascertained?

If Wynne speed numbers had to be found by trial and error, the procedure would be as follows: First, a set of diaphragm for a given lens would have to be made, such set to include all the F numbers from, say, F8 to F111, respectively, as they appear on the dial of the meter. Second, the plate

or film to be tested; being in place, a series of exposures would have to be made with the various diaphragms, such exposures to be made by cap to avoid possible error in shutter speeds. (Such exposures would be, at this writing, late October, of eight to twelve seconds' duration.) Third, upon development the negative required would indicate the Wynne speed number of the plate, which would be that of the F value of the diaphragm with which the plate yielding such negative had been exposed.

It is evident that the foregoing method cannot be that employed by the writer. While it would answer for determining the speed of a single plate or film emulsion, some shorter method must be employed when the speeds of all plates and films, both new and old, are to be determined and re-determined every little while. We append a shorter method.

A special sensitometer is made.

Light, exposure, developer, length of development and temperature of developing solution must be constant—as nearly so as is possible. The sensitometer contains a set of diaphragms from F8 to F111, as they appear on the Wynne meter dial. One who has seen a Wynne print meter can easily imagine what the sensitometer is and how it works. The last number readable on the print meter record is the "Light Number;" the last number readable on the sensitometer record is the F number wanted. A diaphragm of this value is placed in a lens and outdoor exposures on a standard subject are made to confirm sensitometer results; upon such confirmation the value of the diaphragm used is set

down as the Wynne speed number of the product tested. In addition to the foregoing a Chapman Jones plate tester is used, the same being affixed to a camera for use with reflected daylight, the Wynne exposure meter determining the length of exposure. This is exceedingly expeditious. Occasionally the writer takes these plates and goes afield, as was his work in other days when he had more leisure to devote to such work. This is a speed-testing as well as pleasure-giving outing. It may be that time will permit of portraiture or the making of an interior; if so these plates are again requisitioned, and must yield satisfactory negatives from the exposures indicated by the meter.

OIL PRINTING.

ALTHOUGH neither a prophet nor a seventh son, we venture to predict for the process to which its discoverer, G. E. H. Rawlins, has given the above title a popularity amongst pictorialists greater a thousand times, and within a tithe of the time, than has been awarded to gum-bichromate with which it is somewhat akin. It appears for the first time in *The Amateur Photographer* for October 18, illustrated by seven thoroughly convincing half-tone reproductions, which as we cannot print along with the text, and as the text loses half its power without them, we must content ourselves in the meantime with a summary of it:

Briefly then, any strong, suitable paper is thickly coated with gelatine,

and, when dry, sensitised in a solution of potassium bichromate in the ordinary way. This is printed under a negative, soaked in water, till properly swollen, surface wiped and rolled with printer's ink or oil paint, which, for after operations, is kept in various degrees of thickness; and, if desired, of various shades of color. So far there is nothing new or nothing but what is done in photo-lithography, but the novelty lies in the after operations. These include the use of the roller, brushes and even rags, and in their use there is an almost unlimited latitude. Paint or ink may be laid on to utter blackness, and by the same roller all or any part of it removed; and one color changed for another as many times as the artist

changes his mind as to what will be best, or, as the author puts it: "Any portion of the image may be caused to take up either more or less, as desired, of the pigment. It may be piled on here, or reduced to any extent there; a shadow enriched even to deepest blackness, or a high light picked out in the whitest white. True this can, to some extent, be done by the expert in gum; but he can never undo his work, for the image-bearing medium is itself removed in washing the pigment from a gum print, and cannot by any means (other than resort to hand work) be replaced; but, in the oil-print, the image-bearing film remains intact throughout; and thus, although the pigment adheres to, and is regulated in density by it, unlimited alterations may be made in the layer of pigment without any interference whatever with the lower strata of gelatine.

And not only is it possible to *increase* the contrasts as indicated above. The whole scale of tones may be altered in either direction uniformly. Thus, on the one hand, we may, from an average negative, make a print having almost the violent contrasts of a silhouette; or, on the other hand, the contrasts may be all but submerged in a homogeneous tone of any desired intensity. Of course, these are the extremes which it is possible to reach—indeed, in the latter case, it is likely that even an effect of reversal could be obtained—nevertheless, I mention them to show the powers in our hands.

It must, moreover, be borne in

mind that in every case of control having been thus exercised, we can go back to the starting point and bring up a practically normal print upon which we may set to work again to further modify it.

The following abridgment of the working directions will enable any one to try his hand, and from what we know of certain kinds of similar work there should be little difficulty of reaching a fair degree of success. The author says: "I have found the most convenient support to be stout, hard, smooth-surfaced cartridge paper which will withstand considerable washing without becoming tender. This is coated with a fairly thick coating of medium gelatine, which it is convenient to render insoluble with formaline or chrome alum. The sensitising bath is a $2\frac{1}{2}$ per cent. solution of potassium bichromate, in which the gelatine basis is immersed or floated. When dry, which, of course, must take place in the dark, it is printed under the negative, preferably a plucky or contrasty one, till the image is fairly visible, light brown on a yellow ground—and printing is complete when the faintest details in the high lights are faintly visible. The printed basis is next soaked in water at a temperature of from 70 to 90 F.; three changes in the course of half an hour will do, the object being to get rid of the unaltered bichromate and to bring out an image in relief, visible, after wiping off surface water and examination by reflected light. The soaking should be ample, as it can hardly be overdone.

At this stage the print, or, as the author prefers to call it, the "basis," may now be dried and kept indefinitely before pigmenting, in which case, of course, it must be again moistened before the application of the paint; or it may be pigmented at once, but if the pigmenting is to be delayed, every trace of the bichromate must be removed before drying. The next step requires a few materials that are not generally included in the photographer's output; a thick plate of glass a little larger than the largest print to be made; a composite inking roller such as engravers use for "proving;" two or three stencilling brushes of various sizes from a quarter of an inch to an inch and a half, and of the finest possible bristles.

The pigments, as before stated, are of the kind used by artists, but the ordinary oil paints, as sold in the collapsible tubes, are not stiff enough for this process; and although this may easily be remedied, the new patent "Raffaelli's Solid Oil Colors" are just right in this respect. Of these a few will suffice to begin with; they are only distinguished by arbitrary numbers, the names of the constituent colors, unfortunately, are not stated. No. 191 is a serviceable black; No. 183 is a cool sepia, and No. 28 a warm, brownish red. They may be used alone or mixed, the last named being particularly useful for warming up and tempering the others. Of course, any number of other colors in various forms may be used, but it is unnecessary to go further at present. One pennyworth of the *best* refined tur-

pentine, a bit of soft sponge, some linen rags, and a palette knife complete the necessary equipment.

To prepare for work take, with the palette knife, small quantities of paint of the required colors, after having removed the outer skin, as directed on each stick. (Only the most trifling amount is required for each print.) Place it on a piece of glass (such as an old half-plate negative) by way of a palette, adding a few drops of turpentine, and rub them together until perfectly smooth and of the consistency of thick cream, free from all lumps and bits. Spread it roughly all over the palette, then take the roller and roll it in the paint, covering it and the palette evenly and thoroughly. Continue rolling thus for a few minutes, when the turpentine will have evaporated almost entirely.

Now lift the printed basis from the water in which it has been soaking, and lay it face up on the slab of plate glass. Allow the superfluous water to drain away for a minute, and then with a clean, fluffless cloth dab and wipe the surface until it looks dry. Take a small sponge or rag and daub a little of the mixed paint on to it, and, having placed a few drops of turpentine on the centre of the print, rub it all over the surface until it is more or less evenly smeared with a thin layer of paint. Smudges and markings are of no account—it is only necessary to go over every part. When the turpentine has mostly evaporated, and the sponge begins to "drag," take the roller, and, having freshly passed it over the palette a

few times, commence to roll the print from the bottom to the top. (Prints should always be made on basis about an inch longer than the picture, so as to leave a margin at the bottom which can be held down during rolling.) After a few strokes the picture will begin to show, faintly at first, but with continued rolling it will be gradually built up until it has reached its full natural strength, the pigment adhering, as previously explained, in proportion to the light action.

Thus, in order to produce an increase in contrast, the paint must be as stiff as possible; whereas if a flat result is desired it may be much more nearly liquid. This variation I find it most convenient to produce by the use of the stiffest possible paint to start with, and thinning it down with turpentine, which may then be allowed to evaporate until the required consistency is reached.

But whatever the consistency of the paint, it may be applied not only with the roller. Perhaps the most potent possibilities of control lie in the stencilling brushes, for by their aid the paint may be applied with the greatest variety of effect, and not only generally, but locally. The use of these brushes, however, requires practice, since there is a certain knack involved in getting the desired result; and, although this is not easy to describe, it is, perhaps, possible to give a slight idea of the manner of using them, so that a few trials will probably result in some measure of success. The brush must be perpendicular with the print. It is held *very lightly* between

the thumb, first and second fingers, the last named touching it at the side of the handle nearest to the body and low down close to the bristles. Supporting it in this way about an inch above the print, it is dropped, following it downward with the hand, and instantly, on touching the print, it is again lightly grasped and lifted to its former position, and the action repeated as rapidly as possible. In this way the print is tapped, or dabbed, wherever required. If the action is light the paint will be spread more evenly with a tendency to flatness, while a sharp, half-drop, half-throw action picks the paint off, with an increase of contrasts. But whichever effect is produced, the *drawing is in no way affected*, unless this is desired, and aimed for, in which case the paint can be entirely or partly removed with a rag or pointed sticks or brushes.

Or if it should be unsatisfactory in any way, the whole of the pigment may be easily taken off by means of the sponge and a few drops of turpentine, and the rolling-up repeated.

It is perhaps hardly necessary to enlarge further upon the possibilities of modification and control, since the elasticity of the process will be self-evident from the foregoing account, but it may be useful to point out that, especially in the case of small prints, it is possible to work entirely with the brushes, dispensing with the roller altogether.

In advocating oil-printing as an exceptionally responsive medium for the photographic interpretation of the

artist's ideas, it may be that I have fallen into the errors of the special pleader; but the experience gained in working out the process from the chaotic smudges which did duty as my encouragement in the early stages, has given so tempting a vision of its probable future, that my enthusiasm

in its cause may have led to the appearance of exaggeration. I believe, however, that if readers of *THE AMATEUR PHOTOGRAPHER* will make a few prints of themselves they will realize that this is not the case, and that, on the contrary, I have left its limits still undefined.

A NEW THREE-COLOR PROCESS.

THE lay papers have again found the usual "mare's nest" in their enthusiasm over the latest process for the production of photography in natural colors. But the cry of "wolf" has been so often repeated that but for the introduction of the well-known name Koenig, their cry would have met with little attention. And there is this time really something in it. Not that the long looked for true color method has been by Dr. Koenig brought one step nearer than it has been from the first expression of a desire for it; but he has given a method of three-color working that is as simple as it is beautiful.

We have therefore much pleasure in reproducing a description of the new process contributed by E. J. Wall to *The British Journal of Photography*, Mr. Wall probably knowing as much as any one of color photography.

DR. KOENIG'S COLOR PROCESS.

Some time ago a brief note as to Dr. Koenig's discovery of certain leuco bases of some organic dyes, which on exposure to light became oxidised to blue, red, and yellow dyes, appeared in the pages of the *British Journal*; this obviously was the process outlined in the sensational para-

graph which appeared in some of the daily papers last week, and the paragraph was founded on a lecture given by Dr. Koenig, at Breslau, at a meeting somewhat analogous to our British Association. The following note from the "*Deutsche Photographen Zeitung*" gives fuller details, and proves that the process is certainly full of promise.

Whilst the leuco bases of many classes of organic dyes, such as of safranine, for instance, are so prone to oxidation that they cannot be actually isolated in a free state, there are others, such as the leuco-malachite green, which are, as is well known, easy to prepare in a pure state, and are approximately stable against atmospheric influences. It has frequently happened to many chemists that these stable leuco bases, when kept for some time, become very strongly colored when exposed to light. More accurate experiments as to the light sensitiveness of the leuco bases have, however, only been instituted by Gros in Ostwald's laboratory, and he especially tested the leuco compounds of fluoresceine and its substitution products. He confirmed the fact that the leuco compounds, although prepared in a tolerably rough way, are almost all more or less sensitive to light, and measured the oxygen which would be absorbed by the aqueous solutions of the leuco bases or their salts in light.

Except for this no one appears to have entered at any length on such researches, and no one appears to have thought of us-

ing the leuco bases for obtaining photographic prints. The older, and up to the present used printing processes for three-color work, are well known. They are founded entirely on the light sensitiveness of gelatine mixed with bichromate. Not the least disadvantage of the old methods is the impossibility of seeing the progress of printing.

An ideal printing process for trichromatic photography must obviously be such as is neither stained nor printed on colored paper, a process which only works with colorless films, which, according to their preparation, give direct yellow, blue, or red prints.

In the search for such a printing process we in the laboratory of Meister Lucius and Bruning, of Höchst-am-Maine, experimenting with the various leuco bases, very soon had to recognize that the leuco bases, exposed by themselves alone to light, were not capable of giving sufficiently vigorous and brilliant prints. We then imbedded the leuco bases in a film of acetylhydrocellulose or gelatine. Our hope of obtaining more vigorous images was not, however, borne out.

Only when we used collodion as the vehicle did there suddenly show a quite unexpected advance in light sensitiveness. Leuco bases, which, exposed for hours by themselves to light, and only showed a very faint coloration, were in the presence of collodion, even after a short exposure, fairly vigorously oxidized, and gave usable prints.

We very soon saw that the collodion could not act as a mere vehicle, and, as a matter of fact, it was seen that the leuco bases were oxidized in light at the expense of the nitric acid group of the nitrocellulose. We then tried a large number of other substances, and found that all the nitric acid esters, especially those of the higher alcohols, acted in the same way as nitrocellulose. The nitrous esters, on the other hand, and the isomeric nitrous bodies of the aliphatic and aromatic series, were inactive. The nitrosoamines showed a

similar but somewhat weaker action than the nitric acid esters.

It is an interesting fact that the light sensitiveness of the mixture of nitrocellulose and leuco bases can be considerably lowered by the addition of urea and antipyrine. This observation appears to point to the fact that the leuco bodies were oxidized by the nitric oxide which has split off from the collodion. The addition of turpentine or anisol, which may be looked upon as oxygen carriers, act, not at all, or to a scarcely noticeable degree, as accelerators in the formation of the light image. When we added various organic bases to the solution of the leuco substances in collodion, with the idea of preventing the small amount of oxidation by the air which many leuco bodies suffer, we were astonished to observe that films containing chinoline and its homologues were increased in light sensitiveness to an extraordinary degree. An explanation of this noteworthy phenomenon I am unable to give; there is probably some catalytic action.

Nitro-cellulose is not by any means the most active of the previously mentioned compounds; it is only specially suitable for the preparation of pictures, because it at the same time forms the film which carries the image. Much more sensitive still are the mixtures of the leuco bases with the nitric acid esters of glycerine, glucose, and mannitol.

If a sheet of blotting paper is soaked in an ethereal solution of, for instance, leuco-malachite green or leuco flavaniline, it becomes colored to a marked degree with a short exposure; if to the solution, however, some nitro-mannitol is added, the paper becomes intensely and very quickly colored in the light. The light sensitiveness of the mixtures of the leuco bases and nitro-cellulose may be increased to an extraordinary degree by the addition of nitro-mannitol, so much so that twenty seconds in sunshine is sufficient to produce a vigorous print.

I must again draw attention to the fact

that it is quite impossible to produce even approximately useful photographic pictures with the leuco bases alone or with leuco bases suspended in an indifferent film. prints are always flat and without vigor; the oxidation of the leuco bases in the light by the oxygen of the air appears to soon reach a maximum long before the whole quantity of the leuco base is oxidized.

By the use of various leuco bases, yellow, red, green, blue, violet, and gray pictures can be produced. The fixation of the pictures presented at first very great difficulties. Many of the leuco bases can be dissolved out of the collodion film by benzole, toluol, either, or chloroform; such fixing solutions are, however, not practical. The next fixing agents were dilute mineral acids, in which almost all the leuco bases very easily dissolve. In spite of this fact, however, the prints could not be thus fixed, because the leuco bases showed, like the dyes, a certain affinity for nitro-cellulose, and were sometimes very tenaciously held by the same. Fixation was better effected with diluted organic acids, and finally monochloroacetic acid proved to be the best fixing agent for almost all leuco bases. Acetic, di, and tri-chloroacetic acid, cannot be used.

Gros had already examined the behavior of the leuco bases towards different colored lights, and "in groben Zugen," as he says, determined that with most of the leuco bases there appeared a maximum of the coloration when they were exposed to a complementary light. Gros obtained with all leuco bases the weakest action under red glass, the strongest under "rosa" glass. We exposed the various sensitive films under light filters, such as are used for additive trichromatic photography; it was thus shown that the exposed strips showed a maximum effect under the complementary filter, and a minimum action under the filter of the same color. Thus, blue, green, and violet were colored very strongly under red and yellow; under blue they were scarcely colored at all; whilst red was

strongly colored under the green and yellow filter, slightly under the blue, and not at all under the red. Finally, yellow was very strongly colored under blue, and scarcely at all under yellow.

The strong action of the so-called "non-actinic" red on the blue and green light sensitive films is very interesting; probably the dye as it is formed acts as a sensitizer.

Ostwald has already remarked with regard to this that the actions of lights on photographic preparations are not peculiar to the light, that much more probably the light only accelerates actions, which, even with exclusion of light, would appear of themselves after a long time. As is well known, many photographic preparations become decomposed by long keeping in the dark, and especially quickly gelatine rendered light sensitive by bichromate. With our new light sensitive films the behavior is just the same. The action which the light exerts in a few seconds or minutes appears in the dark after hours, days, or weeks, and actually the most sensitive films are the least permanent in the dark, so that they must always be prepared a short time before use. I will, therefore, remark that even with very long keeping in the dark the films are never so deeply colored as in a short time in the light.

The application of these observations for trichromatic photography is as follows:—A sheet of paper is coated with the blue collodion and exposed to light under the corresponding negative. When the blue image appears sufficiently vigorous it is fixed in about a 10 per cent. solution of chloroacetic acid, washed, coated with a thin and hardened gelatine film, and dried. The gelatine film has the purpose of protecting the first collodion film from solution when the second is flowed over it. The dry blue image is then coated with the red collodion and placed under its corresponding negative, so that the outlines exactly correspond with the blue image. Another exposure to light is made, and the print fixed and washed, and finally, in a similar

way, the yellow picture is produced. On account of the extremely thin films and the brilliancy of the colors used, the prints appear unique; the compound colors especially are rendered in an extremely satisfactory manner.

The quantity of the leuco bases used is so small, in consequence of the enormous richness of the triphenylmethane dyes, that a picture with the three composite films is scarcely more costly than an ordinary gum or carbon print. The stability of the pictures is naturally not absolute, even if relatively stable dyes are used for the preparation of the individual pictures. The least stable is the blue, which, however, surpasses that of the so-called blue print or cyanotype.

If one tots up the difficulties which are met with in the printing processes hitherto

used in trichromatic photography, this new process of the Höchst Dye Works, which is called "Pinachromie," may be designated as an extraordinary advance. Colored positives have, as is well known, been comparatively easy to prepare; but trichromatic photography could not, however, become popular so long as it was not possible to make paper prints in a simple way. This, we believe, our printing process permits even for the inexpert amateur, and it will, we hope, conduce to the end of reviving somewhat the waning interest in photography.

It is obvious from the above that, whilst the new process is certainly a noteworthy step, it hardly comes up to the glorious vision conjured up by the journalistic exuberance of the daily papers.

E. J. WALL, F.R.P.S.

OUR PORTFOLIO.

Prints for criticism: only one at a time and only once each month; to be sent to Dr. John Nicol, Tioga Centre, N. Y. The coupon found in our advertising pages must be attached to the back of each print.

1843. W. E. MARSHALL.—"After the Game," a group of five resting after a game of tennis, is better than nine-tenths of all the little prints that come to the Portfolio, and with just a little longer exposure and shorter development would have been very

much better. The result of the under-exposure is the black where there should have been merely shadow, and over-development has made the white shirt-waists simply white paper instead of showing the texture and light and shade incident to such garments. Twice the exposure and a third less development would have made this thoroughly worth enlarging to, say, 12 x 10, a picture that might have told well in any of the best exhibitions. One fault we may mention that you may avoid in future, the placing of three of the heads in a horizontal line, as that always gives a mechanical effect to such pictures, although it may not always be easily avoided. Taking it all in all, however, we like the little picture very much, and if you will learn to give sufficient exposure you will soon do very much better.

1844. CARL KREBS.—"The Old Gateway."

This is in your usual low-tone style and would, we think, be better for a little more contrast, confined, as it is, to the lower end of the scale. A greater fault than that, however, but one that results from that cause, is the reduction of the whole composition to one plane; to foreground and nothing more: and especially to the entire want of the ever essential atmosphere, the most distant object being as well defined as that in the immediate front. Letting the imagination supply these deficiencies, we like the picture very much, its simplicity being its greatest virtue, and causing us to like it better and better the oftener we go to it.

1845. H. E. JONES.—"Ready for Soap and Water," a child just about to go into the bath, has but one serious fault, the absorption of its back into the background, the color and texture of both being exactly alike. A shorter development would have probably obviated this, and longer exposure with shorter development would certainly have done so. Except for that fault the photograph is excellent.

1846. C. B. CONNER.—"The Old Pine Tree" is a fine subject well arranged, but made worthless by under-exposure and over-development. Even forced development gives only intense black where there should be shadow detail, and, of course, perfectly white paper where there should be only half-tone. You never saw the trunk of a pine tree so white as you have made this, whiter even than the whitest birch, and the same applies equally to the sky. You cannot make photographs worth printing without a fairly good exposure, and this has not got half what it should.

1847. T. J. LUNDRIGAN.—"The Island Ferry," a characteristic river or lake boat in the middle of a narrow strip of very good water, probably the St. Lawrence River, with an equally good sky overhead, is much better than nine-tenths of the prints that come to "The Portfolio," although there is just a slight tendency to the flat, or lack of contrast. The exposure has been just right,

and it only needed a shade more development to give the necessary contrast. We should try a slight intensification in the hope of getting just what it needs.

1848. JOS. T. ZIKA.—"September," the title being indicated by the subject, a foreground and middle distance of corn shucks, a shed and little hill in the distance. So far it is very good, but is simply spoiled by the introduction of two men staring at the camera stiff as wooden figures. It is a lost opportunity, as the men are of the right kind and rightly dressed, and they even have in their hands the implements of labor, and why you did not let them continue their work and take them in action instead of letting them stare as they are doing is more than any one can understand.

1849. S. A. SMALL.—"River-Edge." If your object had been to produce an impression of the river-edge half an hour after sunset on a wintry day, we should have said that you had succeeded fairly well except for the utter lack of the essential atmosphere; as you have got quite as much as you ought to have expected under the conditions, an exposure of two-thirds of a second with $f/32$ and a color filter. The same exposure with $f/8$, sixteen times as long, would have been more like the thing, and certainly given you a much better picture. We had thought that those who aimed at picture making had long since abandoned such small apertures as $f/32$, especially when using color filters; they having a tendency to destroy the atmosphere so essential to a picture. And in this there is not a trace of it, the extreme distance being as sharp as anything in the immediate foreground or the middle distance.

1850. C. H. HIGGINS.—"A Study." We can't think why this should have been called a study when it should have been easy to find a more appropriate title. A child seated in the door, apparently the backdoor of a home a few steps above the level, and on the steps three chickens pecking away at food that she has probably

scattered to them. There is the usual woodpile and other backdoor indications and all as sharp as the lens can be made to make them, but all equally false in tone from over-development. We should trim away the foreground to within a quarter of an inch from the feet of the chickens, and from the left side so as to leave just a portion of the point of the broom, and then you would have a pretty little picture, especially if you just slightly reduce the negative before printing.

1851. MARGRET D. HABERLEIN.—"Fall Floods." Surely you can see as well as we the one great fault of this photograph. You never, at 10 a. m. on even an October day, saw a barn and trees so black or a sky and water so white as you have here represented them. If this is the most that you could get from an exposure of one second it would have required three at least to give you anything like true values. Are you sure that the aperture used was $f/16$, a diameter of 1.7 in. with a lens of seventeen inches focus? Such photographs are, of course, not amenable to criticism as pictures, but only from a topographical point of view, and more generally only as to their technique: hence this would have been in every way satisfactory if it only had had sufficient exposure. As already said, you cannot make a photographic negative worth printing from without sufficient exposure, which in this case was at least three times as long as it had got.

1852. M. S. WHITE.—The unnamed print, two ladies under the shade of what appears to be a mass of Virginia Creeper, one of them reading, the other apparently listening but holding in her hand in a rather awkward manner what appears to be a water lily, is a triumph of technique; a perfect example of "the usual thing," without any attempt at what is understood by Art with a big A. But the models need training, although the reader plays her part fairly well, so well indeed as to seem sufficiently interested to not quite agree with the writer of the article on which she is engaged; but

it is not so with the listener. The consciousness of the camera is as clearly written on her face as was the inscription on the cross, and may be read by all who see it. While characterising this as an example of "The usual thing," we do not wish it to be understood that we in any sense undervalue that phase of photography, as indeed it is, perhaps, of quite as much value as the truly artistic; and it would add an additional charm to their work if those who aim at the higher phases of the art would give equal attention to its technique. The only other criticism that we can give is that the grouping might have been better, and that the upright form would have been better than the oblong; although this is merely a matter of opinion and one of secondary importance.

1853. N. E. ARNOLD.—"Neshaming in Winter," a photograph that makes us feel cold as we look at it, although it does not go beyond a "record of fact," there being neither objective point or trace of atmosphere. It is simply a first-rate photograph without any claim to the pictorial. But it is not of less value on that account, as we have often said that the record is of quite, indeed of more practical value than the pictorial.

1854. HARRY RUSHTON.—"The Idle Mill" looks like a print from an over-exposed negative, there being a want of contrast, an even all over tone of just two shades of brown; even the sky is but a lighter shade of the same color. It represents a disused mill with an over-shot wheel in

the centre of which a girl sits, a position that if the picture had been otherwise unobjectionable would have spoiled it. Women do not, as a rule, sit on disused mill wheels, and to represent them as doing so is a phase of eccentricity inimical to true art. Such a subject properly photographed, and with the girl seated somewhere in contemplation would have been suggestive, and suggestion goes a great way in picture making. Instead of saying that the negative was probably over-exposed, it might have been better to say that it had not been properly developed, as we have frequently said that exposures twenty times greater than the correct might by proper development be made into first class printers; proper development in such cases being the addition of suitable quantities of acetone sulphite, instruction for the use of which will be found in several of our back numbers.

1855. W. E. MARHEWS.—"The Fork," a subject in which a road branches off into two ways and so-called forks, and in one of those ways a figure so small as to be easily overlooked, has two serious faults, very much under-exposed, and it is two pictures or subjects in one. As it is, the eye wanders from one side to the other, not knowing on which to rest, and so rests on neither, remaining unsatisfied; while either one alone would have given a thoroughly satisfactory picture. Then, in consequence of the under-exposure, there is nothing but white and black, even the sky is simply white paper, as is every object on

which direct light had fallen, and that is caused by the pushing of development without having got the desired detail in the shadows.

1856. OLIVER B. JUDSON—"Browsing," a couple of cows at pasture on the banks of a stream from which they are separated by a most unfortunate fence, is a wonderfully good example of technique from a negative described as "sharp, hard, too contrasty, and entirely devoid of atmosphere;" by the following treatment, the paper being W. & C.'s platinum, cold development. The printing was in direct sunlight, with two sheets of celluloid between paper and negative; the paper was then for three minutes subjected to the steam from hot water, and development carried on with the solution at a temperature of 120 F. And the result is highly satisfactory, not probably quite so much so as if the negative had been good to begin with, but so far as the technique is concerned, quite up to and above the average of even the best of the prints that come to the Portfolio.

From a pictorial point of view the subject and point of view are good. The only fault, and it is a fatal one, is the fence running in almost a straight line across the middle distance of the composition, and it is so objectionable that in our case we should have left the subject alone fine as it is. Here we see the advantage that the artist of the brush has over the photographer. He could have left the objectional fence out of his picture and had one in every way admirable, while the poor photographer must just take it as it is or leave it alone in its glory. Taking it all in all, the picture, if in imagination we can dismiss the fence as non-existent, is remarkably fine, although we think the effect would have been better if the dark strip in the compound mount had been close to the print instead of separated from it by a broad band of a lighter shade; the greater contrast would have lightened the slightly somber effect.

We reserve the right to reproduce all

A DUNE.

H W Shonewolf.

BROWSING

Oliver B. Judson.

prints sent to the Portfolio, and, as you wish this print returned, we shall try to do so when it comes from the engraver, although we cannot promise that in his hands it will not be injured to an extent that makes it not worth that trouble.

1857. A. M. PHELPS.—"The Old Village." Photography is not well suited for such extensive views, and you have not made the best that might have been; as from a too short exposure and a too long development there is hardly anything between the two ends of the scale, the white and the black, the foreground, for example, being whiter than ever it could be in nature. Then, it is wrongly placed; too much sky and too little village; and the sky does not feel as if it were anything like natural. If the ray filter was used with the strength of the color solution as sent out, it is much too dark and might account for the unreal appearance of the print, and the exposure with it is about thirty times what it would be without it. In the information you give regarding the conditions under which the negative was exposed you leave out the only one that is of any importance or conveys any information, the *f*/ value of the stop. Without that all you give means nothing, and that alone would have told us all that was necessary, the time having been stated.

1858. W. E. MARSHALL. — "The Dog Won't Pose." How could he, when his little mistress, instead of attending to him, is staring at the camera? Had her attention been given to the dog, and she represented in action rather than, as she is, sitting stiff as a lay figure, and knowing that her picture was being taken, you might have had a pretty little picture instead of as it is, merely a good photograph of a pretty girl and a dog that has moved so as to be altogether out of recognition. Try again, and don't let your figure stare into the camera whatever you may make her do.

1859. H. W. SCHONEWOLF.—"A Dune." This comes home to us as few pictures

come, because it is of a well-known part of our summer home, and tells its simple story in a way that few pictures do. A mound of sand, partly covered with grass, and to the unseeing eye nothing more; but to one who has taught himself to see, full of suggestion and telling an old old story. To say, however, that there is a dune and nothing more is hardly correct, as there is in the distance an indication of a trodden path that tells its tale, that the dune is not deserted, that there is life in what without it might have been in the desert. The dune lies in the strip of sand between the Atlantic and the Long Island Great South Bay, and tells of a time when both were very different from what they now are, affords, in fact, matter for speculation which vastly adds to its charm of beautiful simplicity, and makes it a picture that we like to go to again and again, each time liking it better than before, a feeling that all good pictures ought to induce. And the technique is equal to the art, although we should have liked to have a better sky, a sky with a trace of the cloudland that is so often over the dunes, and it would have been easy to have printed in just what is needed to make it perfect.

1860. O. S. BRINKER.—"Residences" is a "record of fact" and aims at being nothing more; the attempt to show one side of a street. It is evidently a beautiful street beautifully shown, but for one serious fault, under-exposure. Surely you never saw, in such good light, such dark, or black shadows as are everywhere where direct light has not been falling. Never forget that in the making of such records the old adage, "expose for the shadows and let the lights take care of themselves," must be acted on. The adage, however, has been improved upon recently; to this extent that the lights should be taken care of in the development, and to do so it is only to stop development at the proper time, before the lower lights become as opaque as the highest of the high lights. Twice the exposure and about the same development would have made this a perfect record.

SOCIETY NEWS.

Secretaries of Societies, or Camera Clubs who want their meetings reported or who have communications of interest to photographers that they wish to have published should send them direct to Dr. John Nicol, Tioga Centre, N. Y.

The Camera Club of New York.

The regular monthly meeting was held on Nov. 8, Tuesday evening and election night. After reading of the minutes the President, Mr. Fred E. Ives, made a few remarks on his tri-chromatic slides, and several were run through the lantern, showing some improvement over those exhibited at the October meeting. No other business was done, and the monthly meeting adjourned.

On Thursday evening, November 10th (a stormy night) Prof. Dwight L. Elmendorf gave an entertaining lecture on a Trip from New York to Algiers, at the Carnegie Lyceum in this city, the net proceeds from which were given to the Camera Club for its benefit. It was the first time the lecture had been given, and was very much enjoyed by members and friends. By the introduction of moving pictures, the lecturer illustrated vividly the motion of large steamers sailing in mid-ocean and also the water scene on the arrival of the steamer at the Azores. His pictures of the curious summer sleigh vehicles used in the Azores were also interesting. At Algiers he was highly successful in obtaining unusually good photographs of groups of Arabs and Arab women without their knowledge by the ingenious expedient of turning his head and apparently viewing the picture in the camera in the opposite direction from which the picture was actually being taken. The results were very satisfactory. Finding the railroad traveling very slow, he hired a French automobile with a chauffeur, and went around with it in the country on the fine roads for eleven days or more without a breakdown, and quicker than the railroad. He found it very convenient for photographic work.

The lecture concluded with illustrations of the interior of a distinguished Arab's

residence, which was beautifully colored and nicely illustrated the many interesting features and flowers therein.

On Wednesday evening, Nov. 23, at the Lantern Slide Test night, the new French and Holland set of interchange slides was exhibited.

A cup lantern slide competition is in progress to be completed the latter part of December.

Akron Camera Club.

We are informed that on November 6th the new five-story office building to which the camera club had just moved was partially destroyed by fire and that most of the effects of the club were burned or badly damaged by water. The fire burned out the fourth and fifth stories, also the roof, while the club was located on the second floor.

The building is to be immediately rebuilt, and the club will retain its quarters as originally planned, which will be re-fitted more completely and conveniently than ever before. It is expected the new quarters will be helpful in increasing greatly the active work of the club and that it will have a good future. Unfortunately the effects of the club were not insured, but the enthusiasm and love of its work among the members will overcome this loss and kind friends will make sacrifices to keep up the excellent service for the good of photography in the community which the club has been noted for.

There is a movement to advance slightly the annual dues of the club for the purpose of increasing its income, and no doubt it will meet with unanimous support by the loyal members of the club in view of the unexpected loss now sustained by the fire. It was a fortunate thing for the club

that the club lantern was in another place at the time of the fire, so that in its temporary quarters the sets of the interchange lantern slides can be exhibited from time to time to members and friends.

The ever-increasing and universal interest in photography should act as a stimulus in a club like this to promote the exhibition of the best examples of the art, as well as to communicate valuable information to the members.

We wish the club continuous success in the field it has covered so well in the past.

The American Lantern Slide Interchange.

THE AMERICAN LANTERN SLIDE INTERCHANGE.—Nineteen years ago the beginning of a systematic interchange of lantern slides was begun between a few photographic organizations in this country. It is one of the benefits of dry plate photography since the work of different sections of the country is examined and viewed by clubs in other sections. This has had a very helpful effect on all classes of amateur photographers and accounts for the annual interest the clubs exhibit in continuing the support of the Interchange. The system of supplying different clubs with a set of one hundred carefully selected slides for exhibition once a month is of much assistance in keeping up the interest of the members in the club, and is supplementary in stimulating them in the manufacture of slides.

The Board of Managers are making arrangements for the interchange of one or more additional foreign sets which it is hoped will be advantageous.

The Amsterdam Amateur Photographers' Society is to co-operate and act as Continental agent for the Interchange abroad. There is also hope that an arrangement with the affiliated societies of Great Britain may be made by which an Interchange of work will be effected. The present foreign set in circulation is composed of fifty slides illustrating the city of Dunkirk, France, prepared by the Photographic Society of that city, and fifty slides of Holland scenery and people by the Holland Society, of which Mr. Jgn Bispinck is President.

The annual meeting of the Board of Managers for the testing of slides occurs on December 8th, when the sifting process of selection is undertaken by a majority vote, of F. C. Beach, W. H. Cheney, John P. Zenner, of Buffalo, N. Y.; Herbert F. Smith, of Syracuse, N. Y., and Henry S. Redfield, of Hartford, Conn.

A stenographer is usually present, part of the time, to note down the reasons for rejecting slides. Some clubs find this quite useful when reviewing the rejected slides.

The 1905 season shows a slight falling off in the membership over previous years, but it is expected the average quality of the slides will be better.

A special set illustrating the main interesting features of the St. Louis World's Fair is in the course of preparation, to be donated for the use of the Interchange by Mr. William H. Rau, the World's Fair official photographer, and will no doubt be of special educational interest as it circulates through the various States and territories.

OUR TABLE.

Books for review and apparatus and material for examination and report to be sent to Dr. John Nicol, Tioga Centre, N. Y.

CAMERA WORK, No. IV.—In the issue of this, probably the most interesting of all that has gone before, we have corroborated

the statement on another page to the effect that Mr. Stieglitz is again in harness; and we are glad to say that,

from private information, we know that, like Richard, he is "Himself again."

Absence and serious illness have resulted in this issue being dated October, although the editor promises to have overtaken the time-lapse by the July number. This will be known as the J. Craig Annan number, six of that well-known pictorialist's works furnishing the bulk of the illustrations, and the premier article being an appreciative notice of the worker by Mr. Joseph T. Keiley, a *multum in parvo* true to the life and a lesson to biography writers. We wish, however, that Mr. Keiley had not fallen into the too frequent mistake of, by implication at least, characterising all Britons as Englishmen. Englishmen are all very well, but a Scotchman has his own notions on the matter and would rather, far rather, be credited with his own nationality.

Roland Rood writes on the influence of photography on our conceptions of nature in a way that is at first sight rather staggering, but with more truth than many will, at that first sight, be ready to believe; and Mr. Stieglitz tells of his impressions of foreign exhibitions. More than one of our and his friends, speaking of the silly attacks on him in some of our contemporaries, have said "Wait till the next number of *Camera Work* comes," but he is too big for anything of that sort, and, knowing that, in this case at least, the detractor suffers more than the detracted, treats them with the contempt they deserve.

Altogether *Camera Work* No. VIII. is one of which the editor may well be proud, and on which the possessor may congratulate himself, any one of Annan's prints being well worth many times more than its cost.

We may add that the truth that there are photogravures and photogravures is abundantly shown in this number. In No IV., mainly devoted to the work of F. H. Evans, whose architectural photographs are admired all over the world, his well-

known "In Sure and Certain Hope" appeared as one of the illustrations, but so far from satisfactory, to Mr. Stieglitz at least, that he complained of it, or rather apologised for it, and, on seeing it in the book, even the maker of the plate agreed with him and furnished another. An impression from this appears in No. VIII., and the difference is so great as to be simply surprising.

* * *

THE PHOTO-MINIATURE, No. 65.—Deals with Home Portraiture, and, being written by the well-known Mathilde Weil, or rather by one whose work is so well known, little more need be said. It is fully illustrated by work from the author's camera, and should be an inspiration to all who care to follow in her footsteps. We may, however, quote her three essentials for success in home portraiture; "Hard Work;" "Common Sense" and "Perseverance;" while her ideal of a lens for the purpose, and with a $6\frac{1}{2} \times 8\frac{1}{2}$ camera, is "what is known as an ordinary, all-round anastigmat, about two inches in diameter and twelve inches focus." Very good indeed, but we wonder if the author had given a thought to the cost of such a lens? Taking the first price list that comes to our hand, that of Bausch & Lomb, the nearest thing to it costs, lens alone, \$167.50, and with shutter \$187.50. But an anastigmat is by no means necessary, as its only advantage is its greater rapidity, and that is only about one-third faster than a good all-round R R at f/8 of the same length, for \$35. or a rapid Universal at f/6 for \$58.

Miss Weil is followed by Gaston M. Alves with Home Portraiture more especially from the amateur's view-point, well worth reading, especially as he recommends the cheaper lenses, at the same time saying that nothing shorter than ten inches should be used on a 5×7 plate, and that 12 inches would be much better. We fear, however, that he rather underestimates the value of "the cheaper forms of portrait lenses" as he assumes that one of the required focal length and working at f/5 or

1/6 is to be got for from \$20 to \$30, while we cannot find a catalogue in which they are not listed at over three times either of these sums. * * *

THE EASTMAN KODAK Co. is about to issue a little volume entitled "Book of the £1,000 Kodak Exhibition," in which will be reproduced some sixty pictures from among the best shown at the recent Kodak Exhibition in London. A copy may be had at 25 cents, either from the kodak dealer or from the Eastman Kodak Co.

* * *

Now that the lantern season is at hand many will no doubt be trying their hands at slide making. There are many formulæ and many different makes of slide plates to be tried, and good results may be obtained with either, for it is not any particular developer or plate which is the essential to success, but the skill with which they are used. It is not our duty to rec-

ommend any one plate, but would suggest a trial of the Agfa Lantern Slide Plate recently placed on the American market. They will be found to possess those essen-

* * *

BARRETT'S PHOTO CLOTH, advertised in this month's issue, must not be confounded with the ordinary blue print fabrics on the market. Being sensitised with silver and printed out like any chloride paper, it may be toned to most pleasing shades of brown or purple brown and the fine grade of sateen used for the support gives to the finished print richness and delicacy. For presentation purposes around the Christmas season it should be much in vogue, especially portraits mounted on the patent cloth mount. If your dealer can not supply you, a card to the Van Dyke Copying Co., 12 State street, Chicago, Ill., will bring full particulars and price lists.

ANSWERS TO CORRESPONDENTS

Questions for answers, matter for publications, and all communications to the editors should be sent to Dr. John Nicol, Tioga Centre, N. Y.

Improving a Damaged Negative.

E. M. HULBERT.—Under ordinary circumstances a negative image should not disappear to the extent you mention, be utterly invisible by transmitted, and only faintly visible by reflected light in four hours in the hypo bath, and we can account for it only by the addition of "Cyclo fixing bath" which you made, and the nature of which we do not know. We had not supposed that photographers of experience used any chemical preparation that they were not acquainted with.

From your description, however, we think there is sufficient of the image left to be developed into a fairly good printing negative by what was wont to be called "re-development," but which in reality is mechanical intensification. Wash the faint negative thoroughly and place it on a levelling stand, or if you have had experience in that way hold it level in the hand. Then

pour over it a solution of pyro, 5 grains; citric acid, 10 grains; water, 1 ounce, to which has been added just before pouring on, 10 minims of a 20-grain solution of silver nitrate. Keep this moving on the plate, watching the effect, and if all goes well the image will gradually acquire sufficient strength. Should the solution darken or get slightly muddy it should be poured off and a fresh supply poured on. Do not forget, however, that perfect washing so that every trace of the previously used hypo is removed is absolutely essential to success in this method of intensification.

A Question of Perspective.

H. H. TUSSEY.—In the answer to which you refer it is the equivalent focus that is meant. Your 7½-in. anastigmat, while it will cover a 7 x 5 plate perfectly, will give a perspective on that size that will be absurdly wrong, or rather that will appear

to be so because taking you too near the subject. Either of the single elements, however, will answer admirably for landscape and portrait work, and when you want to work rapidly, and of course use the lens as a doublet, you should confine yourself to 4×5 .

It should be clearly understood that when the optician lists a lens as covering a certain size he does not mean that for pictorial purposes it should be so used; that he leaves to the pictorialist himself, who ought to know, as we have so often said, that for pictorial purposes the lens should never be shorter than once and a half the length of the longest way of the plate, and twice that length is very much better.

Relation of Lens to Size of Picture on Screen

LANTERNIST.—The battery of lantern lenses screwing into one mount is likely, from your description, to be a set that used to be made by a French optician whose name we forget. The lenses are to be used in pairs to give various focal lengths so that any desired size of disc can be made at various distances from the screen. To use the table referred to you must know the focal length of each of the various combinations, and that may be found as follows: To find the focal length of any particular combination place in the lantern a slide on which is a circular disc of three inches diameter, and set the lantern at any convenient but known distance from the screen. Multiply that distance by the size of the disc on the slide and divide the result by the size of the disc on the screen; the result is the focus of the combination. Example: The lantern is ten feet from the screen and the disc on the screen is six feet. $10 \times 3 = 30 \div 6 = 5$. The lens is five inches focus.

A Requisite to Business Success.

AMBITION.—The specimens are decidedly above the average of nine-tenths of the work of all the professional photographers that we have seen, and if nothing more were necessary to secure success, we should advise you to hang out your shingle, espe-

cially as you already have a connection in the town in which you propose to try your fortune. But more than a technical and artistic knowledge of photography is required. The following, which we clip from *Photography*, shows just what we mean, and if you have that you may fairly expect success:

"A doctor, it is said, will find a knowledge of medicine of service to him if he wants to get on in his profession, but his success, after all, turns most upon the possession of a "good bedside manner." In the same way, tact, the capacity of putting a sitter at ease directly, the instinctive saying of the right thing at the right time, and equally important the instinctive holding of the tongue at the right time, and business aptitude, are the requisites for success."

Backing for Plates.

ANTHALATION.—We have often said that commercial backings are so good and so cheap that there is no need to bother with the trouble of making one. If, however, you *will* make your own, the following is as good as any other, and neither scales off or powders, while it is easily removed by a rub with a wet rag or sponge.

Boil 240 parts of orange shellac and 40 parts of borax in 1,000 parts of water till the shellac is dissolved, and add 4 parts each of sodium carbonate and glycerine. This may be kept as a stock solution, and when about to back plates stir into the quantity required as much of equal parts of dextrine and burnt sienna as will make it of the consistence of thick cream, or so as to be easily applied with a brush. No care need be taken to lay the color on evenly; all that is necessary being to destroy the reflecting surface of the glass.

True Art is Never a Caricature of Nature.

W. H. BLACAR.—The author of the reproduction enclosed in your letter is not by any means one of "the big ones," although for sometime he has been trying to force himself to the front. To that, of course, we can take no exception so long as it is done in the right way, although a

recent letter in which he speaks disparagingly of at least one worker as far above him as the sky of a picture is above the foreground. The reproduction enclosed cannot properly be titled "Haying," although it might be called "The Last Load," and as such it is just such as is referred to by *The Photographic News* in the following sentence: "A favorite subject is the Last Load, and in too many cases the groups of busy workers have been carefully posed in their various positions, and look more like statues or wooden figures than human beings." Just think of haying or even the last load in a light that makes the figures as black as the blackest negro, and at the same time sufficiently bright to make strong cast shadows of the horses in the wagon. Your criticism is correct, only it might have been much stronger, and yet the author of the fiasco aims at being a leader in pictorial photography. He mistakes blur and blackness for art, not yet, apparently, having learned the very rudiments thereof; yet foolish enough to speak disparagingly of one whose work has been received with applause wherever it has been shown, and that is in every part of the world where exhibitions of note have been held.

A Question of Copyright.

(MRS.) F. S. HUNTER.—To make slides for exhibition at the church gathering from the copyright magazine pictures is as illegal as if you were to make them for sale; but we have no doubt that if applied to the publishers of the magazine would give you the necessary permission. The photographs that you know have not been copyrighted may be made into slides with safety, nor will there be anything dishonorable in so copying and exhibiting them. Bear in mind, however, that should the photographer copyright them, you must not after that either sell or exhibit them without his consent.

Faulty Trimming.

FRED T. JENNINGS—Yes, the print 1819 in the October number needs trimming, but whether the print or the block is at fault,

you do not know. Neither, in fact, do we; but the probability is the latter, as had the print been so askew we should have noticed it with recommendations as to the future. The engraver is not always to be trusted, especially as at this season he works mostly by artificial light.

Factorial Development.

R. W. BLAKE.—The developing factor of a mixture of reducers is always a mean of those and their proportions in such developers. There being equal parts of edinol and hydroquinine in that in question, and the factor of the former 20 and of the latter 5, its factor is twelve and a half. We have not tried it in the developing machine, but would suggest six minutes with a temperature of about 60.

After Work on Negative.

W. S. DUVAL.—One of the two prints sent has its foreground and horses too deeply printed, and the other not sufficiently so; try for the happy medium. The clouds are evidently over-developed and should be reduced by Farmer's solution till they print at the same time as the landscape. It is easily done by a moist tuft of cotton and a circular motion. The simplest way to get rid of the dark part on the right, probably caused by an unnoticed obstruction in front of the camera, is by trimming it off, but as that would make the horses and wagon badly placed, we should try to paint it out on the negative so as to match the other parts. One or two trials of that kind of work will show that it is simpler than it looks. You will not be able to make properly exposed photographs under the conditions mentioned until you get a more rapid lens than that supplied with the camera in which this was taken, at least three times as long was necessary to make it anything like of true values; or anything indeed than white and black without the middle tones on which the charm of a photograph depends. Thanks for good opinion of the magazine, and in return for the benefits conferred, all we ask is that you tell other photographers what you tell us.

JUST BORROW A COOKE LENS

and test it on subjects like these. Examine the lens closely. Notice the keen definition with the diaphragm wide open, the detail in the shadows, and that volume of light. Try its covering power and test it for flare in bright sunshine. Notice its fine construction, its flange-screw and its exquisite finish protected with a leather case. Four series are now ready, each perfect, and with full apertures from $F/8$ to $F/4.5$. Write us. We'll tell you which lens to choose and why.

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no. 11

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Net Prices, express prepaid, with prize offer and full directions for printing and making many kinds of fancy work.

SIZE	1/2 Dozen	Dozen	WHITE 1/2 Gross	Gross	*COLORED Dozen
4 x 5	.....	\$0 25	\$1 45	\$3 85	\$0 85
4 1/2 x 3 1/2	.....	30	1 75	3 45	40
Oval for Mounts }	.....	45	2 65	5 25	60
5 x 7	.....	80	4 75	9 40	1 10
6 1/2 x 8 1/2	.....	1 00	5 90	11 70	1 40
8 x 10	.....	8 50	20 85	41 60	4 80
17 x 17	\$1 75	5 75	84 00	68 50	8 00
22 x 22	2 90				

Other sizes cut to size at proportionate prices on orders of not less than one gross at a time. 10-foot rolls, 35 in. wide, white, \$3.25; colored, \$4.50. 10-yard rolls, 35 in. wide, white, \$9.60; colored, \$18.40.

*Note—Colored cloth may be ordered in dozens all one color or six assorted colors. White and light shades of blue, green, yellow, lavender and pink.

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It will pay every photographer to order a mounted art sample; postpaid, 25c.

Prices, three piece mounts, 25, \$2 50; 100, \$8.00. Discounts to the trade only.

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We make negatives (for cloth printing only) from any good photo as follows: 8 x 10, 75c.; 10 x 12, 90c.; 11 x 14, \$1.10; 14 x 17, \$1.15; 16 x 20, \$2.00, and print from them at foregoing prices. Discounts to the trade only.

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ROCHESTER, N. Y.

N. C. Film. 1/400 Sec. Stop f. 6.3

Leonard B. Robinson.

"IOWA" WINNING A HEAT IN 2:10 1/4.

TOO FAST FOR IOWA.

N. C. FILM CATCHES THE FAMOUS PACER IN $\frac{1}{800}$ OF A SECOND.

Evidence of the *quality* of N. C. Film and of the perfect working of the Developing Machine has been coming in very rapidly of late, but we have never harped very much on the extreme speed of our film because we believe that speed is not the first desideratum in film or plate. A letter and photograph received from Mr. Leonard B. Robinson of Sioux City, Iowa, covering the speed question are both so good, however, that we feel that everyone who is interested in photography should have the benefit of them.

THE LETTER.

Sioux City, Ia., Oct. 7, 1904.

EASTMAN KODAK COMPANY,

Gentlemen:—

Like many other amateurs I have long used the Eastman roll films for ordinary work. Last month a big fair was held at Sioux City and races were given on the fastest track in the West, and one of the acknowledged best in the country.

I wished to make a large number of negatives of these races and had not enough holders for dry plates. I therefore determined to see if I could not use my roll-holder and film, and get passable results. I could carry plenty of rolls and develop them in the Kodak Developing Machine and hoped the convenience of using such material would compensate for not using the most rapid dry plates on the market.

I am sending you by this mail an 8 x 10 Bromide enlargement of one of my nega-

Eastman Kodak Company

ROCHESTER, N. Y.

tives made as above, full data being written on the back. The original negatives are all 4 x 5, and while I believe this one to be a jewel in the way of high speed work, I have nearly a hundred others just as perfect.

This is another argument for your developing machine and is certainly proof of the extreme rapidity of your film. Recollect the lens worked only at *f.* 6.8.

Very truly yours,
LEONARD B. ROBINSON.

In addition to the data given in the letter Mr. Robinson gives the following facts:

"Iowa," pacer, property of H. Woods, Eldon, Ia., winning a heat in 2:10 $\frac{1}{4}$ at Sioux City, Sept. 9, 1904. Eastman N. C. Film, lens *f.* 6.8, exposure $\frac{1}{800}$ second. Machine Developed Negative. Print enlarged on Eastman's Platino.

He pertinently concludes the data with the question:

Is Eastman Film Fast?

ANOTHER GREAT VICTORY IN MANCHURIA.

In the Nov. 5th number of Collier's Weekly appears Frederick Palmer's account of the fighting at Liao-Yang, which he characterizes as the "Greatest Battle Since Gettysburg." The story of the battle is superbly illustrated by photographs taken by Collier's War Photographer, James H. Hare, and every one of them was made with a Kodak and the Kodak Developing Machine. On another page we give a reproduction from one of them showing Mr. Hare in company with a Japanese officer.

The success which the Kodak has achieved at the front would have been remarkable under any circumstances, but it is the more marked from the fact that many plate cameras were taken to the front—or as near to the front as they could be carried—yet practically all of the really important

pictures which have been published, are from Kodak negatives.

To this fact we have the testimony of an array of brilliant correspondents and enterprising publishers. The new facts that are coming out almost daily show the exceptional reliability of the Kodak—its adaptation to work of the most important character.

We opine that in future little will be heard from those who in the past, for pecuniary reasons, have proclaimed in their writings that "Kodaks are never used for serious work."

A PERFECT SLIDE.

A clever photographer may make a good picture with a rickety camera and an inferior lens or even with no lens at all; he may sometimes hit it luckily and make an "artistic" print on a poor piece of photographic paper—but when it comes to making lantern slides the quality must be upon the glass or his task is hopeless.

Delicate gradation, fine grain, crispness without harshness, a thin crystal glass support and absolute freedom from mechanical blemishes are the essential qualities of a good slide. All these qualities are combined in Eastman's Lantern Slide Plates—for nearly two decades the standard of quality.

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Eastman Kodak Company

ROCHESTER, N. Y.

Kodak.

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James H. Hare, Collier's War-Photographer with the Main Division of the Japanese Army, whose Machine Developed Kodak Pictures have so fully portrayed the tragic scenes around Liao-Yang.

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